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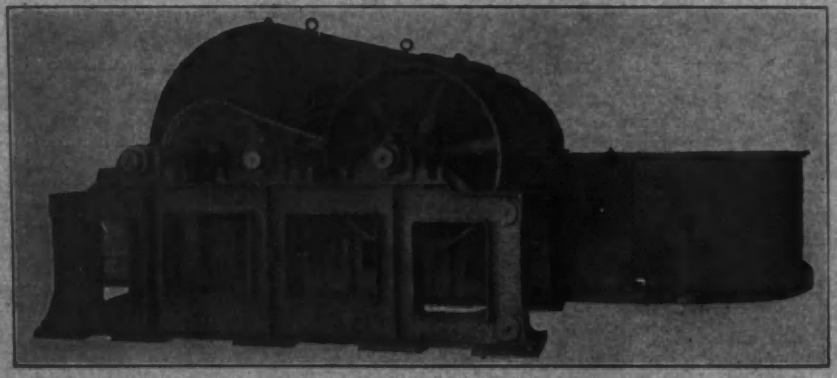

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the
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PAPER

The Magazine of the Paper Industry

Vol. LXXXI, No. 16 Thursday, October 15, 1925

National Paper Conference Is Largely Attended

Over Two Hundred Representative Paper Merchants from All Over the Country Are Present at Fall Meeting at Drake Hotel, Chicago—Standardization and Reduction of Cost of Doing Business Prominent Among the Topics of Discussion—Plan for Standardizing Tissues Approved—List of Prominent Merchants Who Attended

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, October 12, 1925.—Over two hundred paper merchants were present at the fall conference of the National Paper Trade Association which was held at the Drake Hotel, Chicago, on Monday, Tuesday, Wednesday and Thursday, October 5, 6, 7, and 8. Standardization of sizes and weights and simplification of trade practices were leading topics of interest. Reduction of the cost of doing business was likewise discussed by speakers at the various sessions.

Activities Begin Monday

Activities of the convention commenced early Monday morning with a meeting of the Survey Committee. At eleven o'clock the same morning there was a joint meeting of the Administrative and Executive Committees, followed in the evening by a meeting of the Tissue Conference Committee.

On the second day The Executive Committee of the Fine Paper section met at the same time as a similar committee of the Wrapping Paper Division. In the afternoon the board of directors met for the first time; and two other important meetings were those of the Conference Dinner Committee, in the private dining room.

Wednesday the French Room was used for a meeting of the entire Wrapping Paper Division in the morning, and of the Fine Paper Division in the afternoon, and this was repeated on the closing day of the convention. There was no joint meeting of the two divisions, because it was conceded there was no important business to transact.

According to Secretary William C. Ridgway, of New York, the Eastern representatives turned out in larger numbers than ever before, possibly because of the special mention and urging on their invitations.

Besides the conferences mentioned, there were dozens of side conferences, such as that of the Middle States Wrapping Paper Association, Thursday afternoon, of the Western Paper Merchants Association, and the purchasing agents of the Writing Cover and Tissue Paper Manufacturers.

Business Harmony the Keynote

The keynote of the convention was business harmony, cooperation, and the simplification and standardization of old and worn out methods. As stated by H. R. Colwell of the United States Department of Commerce, at a later meeting, the real competitors of a business are not the other men in the same field, but other whole industries selling a product which could be used instead of yours. This spirit drew the paper merchants closer together than ever before. There were more earnest and lively discussions than at any of the previous conventions.

At a joint meeting of the Tissue Paper committee of the Paper Trade Association and the Tissue Paper Manufacturers Association, under the auspices of the United States Department of Commerce and presided over by Mr. Colwell, at the close of the convention a recommendation regarding the standardization of the size, weight and quality, etc., of tissue paper was unanimously approved. The recommendation was the concensus of opinion of the trade itself, because it was gathered through three hundred questionnaires which were sent to the paper companies, under the direction of Chairman A. J. Corning of Baltimore.

Standardization of Grocery Bags

Incidentally, the Paper Trade Association fell in line with the general approbation for the standardization of grocers' bags, voteing unanimously, following the precedent set at Washington in June.

The standardization of tissue paper of all kinds will go into effect on March 31, 1926. The recommendation reduces the number of thirty odd sizes to practically a third of that number. Every package and roll will be labeled with the government guarantee, stamped with the U. S. seal, and with the specifications alongside the seal.

Mr. Colwell said that this same simplification was taking place throughout the country in every imaginable kind of business. In answer to a question, he included even the U. S. government. As an example, he cited the instance of the paving brick industry, whose greatest competitor is the asphalt industry. With the mediating work of the government, the industry was able to reduce the number of brick sizes from one hundred to five or six, and was then more able to compete with asphalt. The merchants were greatly interested in these remarks.

Recommended Tissue Standardization

The recommendation adopted is as follows:

No. 1 and No. 2 Sheet Tissue	20 x 30—480
(Sizes to be standardized on basis of 24 x 36—480-10 lb.)	34 x 36—480
Tissue for Shoes	(8½ x 15)
(Sizes to be standardized on basis of 24 x 36—480-10 lb.	(11 x 20) (12 x 24) (13 x 26)
Napkins (Bulk flat napkins 1000 to package)	
Plain Tissue (10 lb. basis)	13 x13
Full crepe	13½x13½
Semi-Crepe	13 x13
Over size	18 x18

Toilet Paper:

Sheet toilet 5 x 7 in packages of 500 and 1000, basis 24 x 36—480-10 lb.

Roll Toilet 1000 and 2000 sheet rolls, basis 24 x 36—480-10 lb., in the following sizes, which alone shall bear label:

4½ x 5
4½ x 4¼
4½ x 4½

On unbanded toilet paper the label shall be placed on the carton

Size and count shall also be placed on all shipping containers of all of the above grades.

The present committees on tissue paper, represented by Chairman A. J. Corning of the National Paper Trade Association and President F. W. Hoefler of the Tissue Paper Manufacturers Association, will stand until changed at future conferences, for the purpose of conferring with the government officials as to discrepancies which may arise, or complaints that someone of some company is not following the agreement made by the members of the association.

The convention was both socially and commercially successful.

Among Those Who Attended

Registration at the convention was as follows:

James M. Abell, Butler Paper Corporation, Chicago; J. G. Ashley, Minneapolis Paper Company, Minneapolis, Minn.; Charles Addoms, Miller and Wright Paper Company, New York; R. P. Andrews, R. P. Andrews Paper Company, Washington, D. C.

Lawrence M. Brady, Moser Paper Company, Chicago; Charles D. Brown, Bradner Smith & Co., Chicago, Ill.; P. A. Beckjord, E. J. Stillwell Paper Company, St. Paul, Minn.; Wiley Baxter, Jr., Baxter Paper Company, Baltimore, Md.; C. N. Bicknell, Union Paper & Twine Company, Cleveland, Ohio; L. R. Boswell, Minneapolis Paper Company, Minneapolis, Minn.; Arthur W. Blackman, D. F. Munroe Company, Boston, Mass.; James E. Bradley, Bradley-Reese Company, Baltimore, Md.

G. C. Custer, W. F. Nackie Paper Company, Milwaukee, Wis.; A. M. Curryer, Pratt Paper Company, Des Moines, Ia.; P. H. Clifford, C. P. Lesh Paper Company, Indianapolis, Ind.; John A. Church, Cincinnati Cordage and Paper Company, Cincinnati, Ohio; Robert G. Clayton, Sheridan-Clayton Paper Company, St. Joseph, Mo.; A. J. Corning, Hubbs & Corning Company, Baltimore, Md.; J. A. Carpenter, Kansas City Paper House, Kansas City, Mo.; Hubert L. Carter, Carter, Rice & Co., Boston, Mass.; D. C. Culberston, Culberston Paper Company, Cincinnati, Ohio.

W. F. Doyle, Chatfield & Wood Company, Pittsburgh, Pa.; Charles W. Dau, Carpenter Paper Company, Des Moines, Ia.

L. Evans, Cincinnati Cordage and Paper Company, Cincinnati, Ohio; William E. Ebbets, Coy, Disbrow & Co., New York.

Roger I. Fisher, Fisher Brothers Paper Company, Fort Wayne, Ind.; A. E. Fuhlage, Beacon Paper Company, St. Louis, Mo.; Fred F. Fox, Crescent Paper Company, Indianapolis, Ind.; J. Wyman Flint, Dever Brothers Paper Company, Milwaukee, Wis.; J. Friedman, City Paper Company, Birmingham, Ala.

G. L. Green, Crown Paper and Bag Company, Jackson, Mich.; Max Greenbaum, Beekman Paper and Card Company, New York.

W. N. Gillett, Chicago Paper Company, Chicago.

W. B. Holliday, Union Paper and Twine Company, Buffalo, N. Y.; Ernest H. Hoel, Carpenter Paper Company, Omaha, Neb.; W. J. Herrmann, E. A. Bouer Company, Milwaukee, Wis.; Edgar A. Hall, Jr., Pilcher & Hamiltona Company, Chicago; Edward F. Herrlinger, Union Selling Company, Cincinnati, Ohio; S. J. Hodgins, Central Topeka Paper Company, Topeka, Kansas; Forest Hopkins, Paper Mills Company, Chicago.

Dean Y. Johnston, Chatfield & Woods Company, Cincinnati, Ohio; Ellis R. Jones, Kansas City Paper House, Kansas City, Mo.; Harold F. Leahy, La Salle Paper Company, Chicago; Perry W. Lesh, C. P. Lesh Paper Company, Indianapolis, Ind.; A. W. Leslie, John Leslie Paper Company, Minneapolis, Minn.; F. P. Leslie, John Leslie Paper Company, Minneapolis, Minn.; V. H. Larsen, Crescent Paper Company, Indianapolis, Ind.; Ross Likins, Springfield Paper Company, Springfield, Mo.; L. F. Leach, Jr., Kansas City Paper House, Kansas City, Mo.

M. D. McAlpine, Bradner Smith & Co., Chicago; George McKinney, F. A. Flinn, Inc., New York; F. W. McCarty, Standard Paper and Woodenware Company, Kansas City, Mo.; W. F. McQuillen, Storrs & Bement Company, Boston, Mass.; Fred. J. McClellan, McClellan Paper Company, Minneapolis, Minn.; W. C. McLoughlin, Union Paper and Twine Company, Detroit, Mich.; O. A. Miller, Central Ohio Paper Company, Columbus, O.; W. C. Merzweiler, Miller Paper Company, Louisville, Ky.; W. R. Mershon, Standard Paper Company, Milwaukee, Wis.; Louis J. Marshall, Marshall Paper Company, Appleton, Wis.; H. W. Mathewson, Paper Supply Company, Minneapolis, Minn.; A. M. Miller, Central Ohio Paper Company, Columbus, Ohio; J. C. Mallalieu, George W. Millar & Co., New York; R. E. Myers & Co., Rochester, N. Y.

A. F. Nesbitt, Cincinnati Cordage and Paper Company, Dayton, Ohio.

W. A. O'Hara, Diem & Wing Paper Company, Cincinnati, Ohio.

R. E. Parker, Parker, Thomas & Tucker Paper Company, Chicago; W. J. Plant, Swartwood-Nelson Paper Company, Minneapolis, Minn.; F. W. Power, Carter, Rice & Co., Boston, Mass.

R. Roesch, Union Paper and Twine Company, Cleveland, Ohio; William C. Ridgway, Secretary National Paper Trade Association, New York.

N. A. Schoenbucher, National Paper Trade Association, New York; A. N. Sherill, Riegel & Co., Philadelphia, Pa.; H. J. Severance, Hubbs & Howe Company, Buffalo, N. Y.; A. W. Sielaff, A. E. Sielaff Paper Company, Milwaukee, Wis.; H. Sielaff, A. E. Sielaff Paper Company, Milwaukee, Wis.; Fred. Schlosser, M. F. Schlosser, Inc., New York City; C. T. Schwarz, Schwarz Paper Company, Lincoln, Neb.; J. A. Sipe, Fort Smith Paper Company, Fort Smith, Ark.; W. B. Stevenson, Storrs & Bement Company, Boston, Mass.; A. H. Seyler, Cleveland Paper Manufacturing Company, Cleveland, Ohio; Thomas F. Smith, Louisville Paper Company, Louisville, Ky.; George H. Strott, New York Paper Company, Baltimore, Md.

George R. Tolen, Midland Paper Company, Chicago; Al Tennyson, R. P. Andrews Paper Company, Washington, D. C.; A. J. Tayloe, Tayloe Paper Company, Memphis, Tenn.

Frank J. Wright, Acme Paper Company, St. Louis, Mo.; H. A. Washburn, Messinger Paper Company, Chicago; B. C. Whitney, Whitney Paper Company, Wichita, Kan.; Kit S. Warner, John F. Sarle Company, New York; Sidney L. Wellhouse, National Paper Company, Atlanta, Ga.; O. B. Wheeler, Diem and Wing Paper Company, Cincinnati, O.; C. A. Wilder, Wilder Brothers Company, Philadelphia, Pa.; F. W. Wilson, Blake, Moffitt & Towne, San Francisco, Cal.; Jules Wolbrette, Southern Paper Company, New Orleans, La.

Jacob Kuss Goes with Watervliet Paper Co.

KALAMAZOO, Mich., October 12, 1925.—Jacob Kuss has been appointed superintendent of the coating division of the Watervliet Paper Company, Watervliet, and will assume his new duties at once. Mr. Kuss is well-known in Kalamazoo River Valley Paper mill activities and has a long period of experience in the coating branch of the paper industry. For years he was superintendent of the coating division of the King Paper Company and when the Allied Paper Mills consolidation took place, he continued with the latter concern. His residence in this city is at 1420 Egleston Avenue. It is expected that his employment by the Watervliet Paper Company will necessitate his removal to that city.

New Riverbend Mill Construction Is Completed

One Machine of 100 Tons Daily Capacity To Begin Operation Next Month at Price Bros. Plant —Another 100 Ton Machine To Be Ready by End of Year—Canadian Mills Securing Australian Business—Less Timber Being Destroyed in Quebec Forests.

[FROM OUR SPECIAL CORRESPONDENT]

MONTREAL, QUE., October 12, 1925.—Construction of Price Brothers new 200-ton news print mill at Riverbend, Que., is now complete and one machine of 100 tons daily capacity will come into operation next month, according to a booklet just published by Royal Securities Corporation, covering the properties and business of Price Brothers. Installation of the other machine at the Riverbend mill is expected to be completed by the end of the year. With the coming into full operation of the Riverbend mill, Price Brothers total capacity, as regards news print paper, will be 700 tons per day. The company has an abundant supply of low-cost pulp wood and is assured of a sufficient amount of cheap power under contract with the Duke-Price Power Company—to provide for complete electrical operation at Kenogami as well as at Riverbend. The increased capacity is expected to add materially to the company's earning power. The Riverbend mill will be entirely operated, as regards both motive power and steam generation, by hydro-electric power supplied from the nearby Duke-Price development, and will be one of the first news print mills on this continent to be operated throughout by electrical power. It is stated that water powers controlled by the company have a total estimated capacity in excess of 125,000 h.p., at present developed to a rated capacity of 63,250 h.p.—equivalent to the hydro-electric requirements of a city of approximately 200,000 people.

News Print Shipped to Australia

It is stated here that Canadian news print mills already are feeling the advantages of the new Australian treaty in the opening up of the market there through the removal of the customs tax of £3 a ton. For more than two years the British mills enjoyed a preference through the privilege of free entry, and Canadian shipments, that during the war reached nearly 40,000 tons a year, were finally wiped out entirely. Shipments have been made the last week from several Canadian mills, including Laurentide, it is understood. It is estimated that in the three months to December 31, about 6,000 tons will find a market there from Canada, and next year 30,000 tons will be shipped from this country. This will represent about one-third Australia's total consumption, the rest going to English mills that, naturally, are now strongly established. One of the interesting points about the new conditions is that Laurentide regains one of its oldest markets.

Fewer Forest Fires in Quebec

Figures on forest protection in the province of Quebec during the present year issued by Henry Kieffer, chief of the forest protection service in the province, show that up to October 1, 1925, there had been in the neighborhood of 450 forest fires discovered, entailing a loss of not quite 25 square miles, while out of the entire amount not more than three square miles, or 1,920 acres, was merchantable timber. At the same time last year there had been about 550 fires, with a timber loss of about 160 square miles, out of which there was some 65,000 acres of merchantable timber, the damaging fire in the Gaspe region early last fall accounting for some 56,080 acres of this amount. Thus it will be seen that there is a big reduction in the amount of timber reported destroyed by forest fires this year, the entire 1925 loss to date being only a little over one-sixth of last year's damage, while as regards merchantable timber destroyed, this year's ratio is a trifle over 3 per cent. of last year's figures.

Although the 1925 figures are encouraging, and protection officials figure that the season is almost over, on account of the cold nights and frost, they are not relaxing in the slightest, but will keep the fire wardens on the job until the last danger period is safely past. They are keeping a careful look-out for the month of October, bearing in mind the fact that last year there were some 86 fires in this month. The present year is the best ever recorded in the history of the province of Quebec from a forest fire point of view, for less timber of any kind has been destroyed than ever before.

Travel Permits in Forests

Travel permits are still in vogue for all people who travel through Crown lands in the Province of Quebec. According to an order-in-council appearing in the current issue of the Official Gazette, everybody passing through the forests of the province, save the holders of location tickets, are obliged to provide themselves with these travel permits.

Pulp and Paper Men Meet at Toronto

Fifty representatives of Canadian pulp and paper mills were entertained by the Canadian General Electric Company in Toronto, October 12 and 13. The gathering made its headquarters in the King Edward hotel.

A number of addresses on electrical problems of the industry were read and discussed. The meeting opened at 10 o'clock Monday with addresses by D. C. Durland, president, and J. J. Ashworth, general manager, of the Canadian General Electric Company. Papers read that day were as follows: "Evolution of the Sectional Paper Machine Drive," by H. W. Rogers, General Electric Company; "The Electric Steam Generator," by M. P. White, Canadian General Electric Company; "Switchboards and Control Devices," by S. E. M. Henderson, Canadian General Electric Company; "Steam Turbines for Paper Mills," by H. J. Madison, General Electric Company, and "Modern Trends in Industrial Control Practice," by A. G. Turnbull, Canadian General Electric Company. A motion picture, "The Wizardry of Wireless," was shown at the beginning of the afternoon session.

The following papers were read during the following day's session: "Flow Meters, Mechanical and Electrical, for Steam and Water," by R. E. Woolley, General Electric Company; "Power Factor Improvement," by B. L. Barnes, Canadian General Electric Company; "Electric Pumping in Paper Mills," by R. H. Rogers, General Electric Company, and "Care and Maintenance of Electrical Equipment in Pulp and Paper Mills," by W. W. Cronkhite, General Electric Company.

In the afternoon of the second day a bus trip was made to the Mississauga Golf and Country Club for golf and dinner. Those of the guests who did not play golf were taken on a sight-seeing trip in and around the city of Toronto, ending up at the club for dinner with the remainder of the party.

One of the features of the convention was an automatic delineascope in the hotel lobby, showing continuously successive views of electrical applications in pulp and paper mills. This device projected 100 lantern slides with appropriate titles.

Lake Shore Paper Co. in New Quarters

CHICAGO, October 12, 1925.—The Lake Shore Paper and Twine Company has moved into larger quarters at 522 West Erie street. At the new address much increased space will enable the company to carry a more complete stock and insure better service to its customers.

Paper Demand In Philadelphia Is Expanding

Distribution While Not Up to the Usual Volume at This Season is Considerably Improved Over Early Periods of the Year—Demand is Increasing, Especially For Paper Suitable for Holiday Uses—Armstrong Speaks on "Merchandising Through Printed Salesmanship"

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 12, 1925.—There is a material gain in the paper distribution of the Quaker City and the territory supplied from these markets. The growth in distribution while not up to the normal standards of this season of the year, nevertheless indicates that conditions are vastly improved over those ot any other period of 1925. From now on the dealers are looking forward to a brisker business, in anticipation of the coming holiday demands for both fine and coarse papers. Prices are holding fairly well and with many of the coarse specialties there is a firmness in quotation that may be the forerunner of further stiffening of values with the closing days of the year.

Specialties in Fine Papers in Demand

Most of the fine papers that now are moving from warehouses into the hands of the consumer are those grades that will be especially adapted for the holiday requirements of the stationery and printing industries. Greeting card stocks, engravers announcements and other social stationery supplies are now passing out of the dealer's hands into the allied industries in large volume. Writings and other specialties used by the manufacturing stationers and printing trade, too, have been among the more active stocks. Preparing for the closing of the year's accounts and for inventory season will shortly create a more active market for many of these grades.

Coarse Papers in Advancing Market

Approaching holidays have caused a freer demand for many of the grades of wrappings, particularly those used for gift coverings, and for bulkier commodities consumed by the retail merchants. The manufacturers comprising the industries that are especially Philadelphia institutions now are seeking many specialties which throughout the summer months have been more or less quiet. Builders papers have been among the more active of the autumn stocks particularly in the New Jersey territory adjacent to the site of the Philadelphia-Camden Bridge where realty is now being purchased for home building purposes.

Mills Holding Steady Operations

Mills in this vicinity are holding steadily to the operating levels of last month and although there are on hand enough orders to keep plants going at present capacity for the next couple of months new demands have shown a tendency to quiet down awaiting further evidences of advancing business. Box board mills are chiefly concerned with the holiday requirements of the box manufacturers now engaged in production of Christmas containers chiefly, although there is a fairly well maintained business for other boxes used in the knit goods, hardware and like industries. Mills manufacturing glassines and fine wrappings for the confectionery, grocery, food and similar trades are speeding up operations with their advancing holiday requirements. Generally the mills are operating on from 80 to 90 per cent of capacity, a few being on full time.

First Educational Meeting

Educational propaganda helpful to the printers and the paper salesman was successfully initiated on Monday evening when the paper men of the Quaker City and their allied associates in the printing industry met at the Elks Club for the first of the series of helpful sales talks to be given this season by the Philadelphia Paper Trade Association. More than 100 representatives of these branches of the Graphic Arts were present to hear Howard Armstrong of the Donavan & Armstrong Company, Philadelphia, present his views on "Merchandising Through Printed Salesmanship," in which he stressed the harmony existing between the printer, advertising and paper distribution industries emphatically denying the prevailing opinion that the printer and the advertising men were antagonists and practically demonstrating the close co-operation between the allied industries by facts. He gave the paper men and printers many valuable hints on paper and its sales relations to the printing and advertising fields and how it proved an asset in the merchandising of both. Previous to adjourning to the adjacent auditorium the attendants joined at the dining table for sociable contact and there listened to the presiding President of the Philadelphia Typothetae Charles Kinsley express his appreciation of the opportunities for helpfulness that were forthcoming from these series of educational talks following a brief introductory address by President Morgan H. Thomas, of the Philadelphia Paper Trade Association. In the auditorium President Thomas introduced George W. Ward, Chairman of the Paper Trade Committee in charge of the Educational Campaign and under whose guidance the lectures have been compiled and who outlined the purpose of the talks. Much enthusiasm was displayed in the meeting. These talks to be held every second week throughout the Fall will supplement the series of educational talks given last year by the Typothetae in reciprocation of the favor it conferred on the paper trade by interesting and informative lectures on paper from the printers' point of view and its relations to their own trade. The second of talks will be held October 19, at the Elks Club, with C. W. Cabot, advertising manager of the Hammermill Paper Company, occupying the platform. His topic will be "Printing Gets Things Done".

Paper Men Tour Sesqui Grounds

With Simon Walter, chairman of the Sesqui-Centennial Committee of the Paper Trade Association and President Morgan H. Thomas, of that organization as hosts, the paper distributors were shown through the grounds of the Sesqui-Centennial Exposition last Friday as the guests of Mayor Freeland Kendrick of Philadelphia and Col. Collier, director general of the Sesqui Commission. The interest of the trade in the exhibition of the paper industry and its representation at the Sesqui-Centennial celebration was impressively displayed by the half hundred members of paper firms in this city who joined in the tour of the grounds and who were the guests of President Thomas and Chairman Walter at luncheon on the grounds following their survey of the building operations.

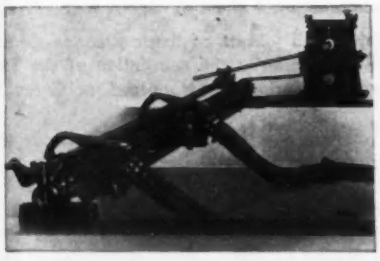
Thomas M. Royal Returns From Europe

Following an extended tour of Europe, Thomas M. Royal, head of the bag manufacturing firm bearing his name at 7th and Grange streets, has returned to his desk. His associate in the business, Benjamin C. Betner, first vice-president of the company, journeyed to New York to greet him upon his arrival. While President Royal had anticipated an earlier return, having arrived in New York on a homeward bound trip a little over a month ago, he was obliged immediately to take a returning European steamer, having received a wireless message in mid-ocean stating that his daughter Miss Eleanor Royal, one of the younger debutantes, was seriously ill abroad with mastoiditis and would undergo an operation in Paris. The operation proved successful and the homeward journey was resumed.

production chain Machinery

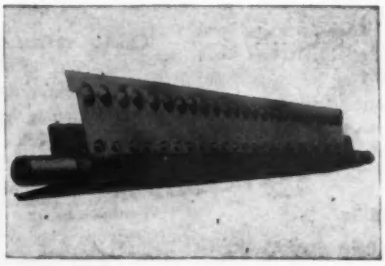
Felt Conditioning — Doctoring — Power Transmission

The Vickery Felt Conditioner



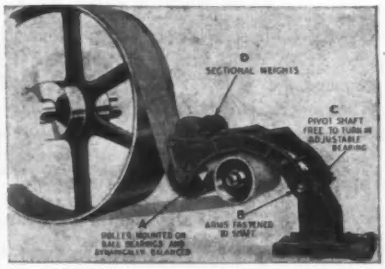
The Vickery Felt Conditioner keeps felts in condition to operate constantly throughout their life. It increases production by eliminating the time required for washing or roping felts. It improves the quality of paper by keeping felt conditions constant. In most cases it also increases the life of the felt.

The Vickery Doctor



The Vickery Doctor, based on entirely new principles, automatically maintains perfect contact with rolls or cylinders under any and all conditions. It is entirely self-adjusting and absolutely non-scoring. It is the ideal doctor for calenders, dryers, intermediate rolls and press rolls. It provides at last a successful doctor for dryers, with consequent saving of steam and improvement of finish.

The Pulmax Drive



The Pulmax Drive is a short-center belt drive that makes possible a remarkable improvement in transmission efficiency. It is widely used in paper mills on beaters, pumps, fans and engines. It is also applied on the cone pulley drives of paper machines. Savings in power, belting and space, and steadier, more dependable driving are among the advantages of the Pulmax Drive.

In most mills there are weak links in the chain of production which Bird machinery will strengthn. There may be one or more in your mill. May we have a chance to show you how the chain might be made stronger? We are at your service.

South Walpole, Massachusetts

Mill Machinery

BIRD MACHINERY

Kimberly-Clark Co. Installs Library Service

Department Makes It Possible for Employees To Get Free Use of Trade Literature Connected with His Work—Lake Superior Mills Start Operations—Tissue Paper Manufacturers Association Hold Semi-Annual Convention at Green Bay—To Speak on Stream Pollution

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 10, 1925.—The educational department of the Kimberly-Clark Company at Kimberly, has built up a valuable library service for its employees. It is the aim of the department to make it possible for any employee to get the free use of the trade literature connected with his work.

The company has for several years been subscribing to a large number of trade papers containing the best information written on the subject of paper making. The library service department has collected these magazines and has catalogued the various usable articles in each.

There are now catalogued for distribution about 6,000 paper making articles. It is almost impossible to think of the subject in connection with paper making on which this service cannot furnish information.

For example, on the subject of beaters, there are 52 separate magazine articles; the subject of bleaching, 35 articles; boilers and furnaces, 140; coal, 150; color, 42; cooks and cooking, 50; belts and belting, 130; pulp, 120; pumps, 50; sulphite, 50; wood, 40; acids, 34.

Lake Superior Paper Mills To Start

The Lake Superior Paper Mills, which is Ashland's latest born in industries, will begin operations by October 10, it has been announced.

When operation begins, the mill will have one of its two paper making machines ready. The other will be in service probably by December, according to John Meyer, general superintendent of building and remodeling at the plant.

Rain Falls Help Wisconsin Mills

Recent rain falls have considerably increased the flow in water-power streams utilized by Wisconsin paper mills. The precipitation was hardly sufficient, however, to produce much of a change. Paper makers complain that this has been one of the worst years in history for low water stage.

Kimberly-Clark Co. Promotions

Two important promotions were announced recently by the Kimberly-Clark Company. Both took place in the company's Niagara, Wis., mill. Nels Rassmussen was promoted from tour boss at the Niagara Falls mill to superintendent of the Niagara mill. The son of a veteran of 35 years' service with the Kimberly people, he started working for the company at Neenah 12 years ago. He worked his way successively to machine tender, spare hand, and tour boss. He held the last mentioned position for four years.

Gaylord R. Stpelke, recent graduate of Coe College, Cedar Rapids, Iowa, has been made physical director. He was captain of Coe basketball team which won a long series of games last year and was chosen all state basketball guard.

To Present Paper Side of Stream Pollution

The paper mills will be given their opportunity to present their side of the stream pollution controversy at the state convention of the Izaak Walton League at Green Bay, October 14 and 15, when a representative of the American Paper and Pulp Mill Superintendents Association, not as yet chosen, will speak.

For years sportsmen have been charging the paper mills with contributing most largely to the pollution of the rivers, and very little has ever been said in their defense. Executives of the Izaak Walton League, however, feel that it is unjust to single out the paper industry for this attack, inasmuch as experts have frequently shown that pollution is the result of a compound cause, sewage from cities, offal from fish houses, packing plants and soap factories, much more than any waste from the paper mills.

"We feel that an unintelligent movement would create antagonism, and that the conservationists would thereby lose the cooperation of the very people whom they are attempting to interest in the disposal of waste through methods other than flushing it into the rivers," said John M. McHale, first vice president of the League. "This is no time to become hysterical—to charge a single industry with the burden of pollution, and to demand immediate and wholesome reparation."

Boiler Accident at Lakeview Paper Co.

The bursting of flues in the boiler of the Lakeview Paper Company at Neenah, Wis., last Wednesday afternoon caused a temporary shutdown of the mill. The accident necessitated an idle period of several days.

Tissue Manufacturers Meet at Green Bay

Chicago manufacturers and jobbers of tissue paper to the number of about 40 were in session at the convention of the Tissue Paper Manufacturers Association which opened at Green Bay Friday morning.

All parts of the country were represented. This is the semi-annual meeting of the association and is devoted chiefly to the discussion of technical problems in the industry.

Friday morning was taken up with a business meeting. In the afternoons the delegates inspected three paper mills at Green Bay. In the evening there was a banquet at the Baumont Hotel, at which Professor John R. Commons, noted economist of the University of Wisconsin, delivered an address.

Alfred T. Gardner Married

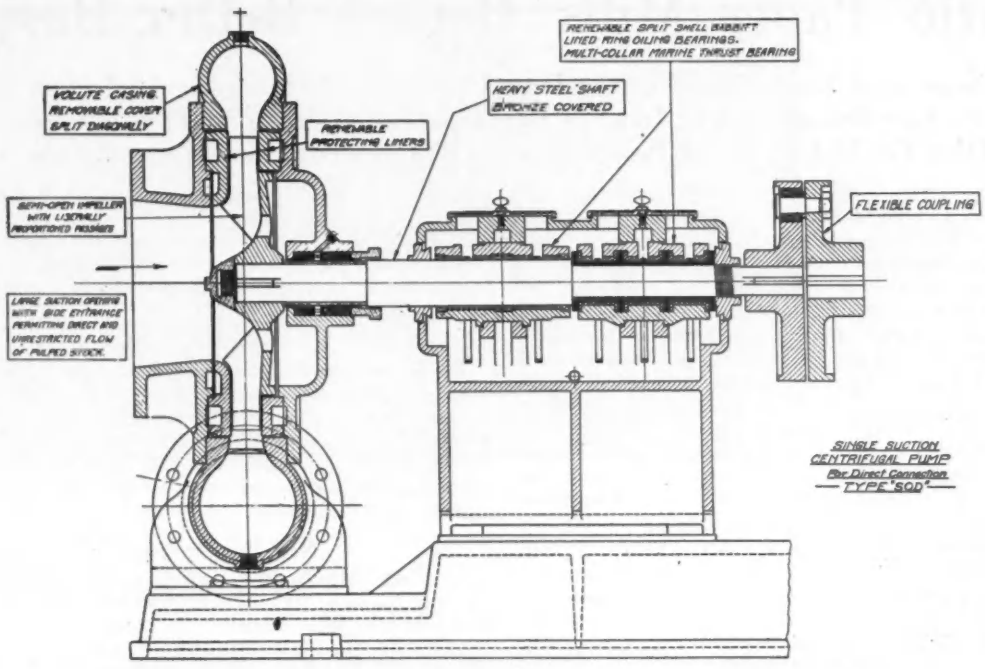
The marriage of Alfred T. Gardner, manager of the Depere Paper Manufacturing Company of DePere, Wis., and Miss Christine Geyer, of Green Bay, occurred October 3 at the latter city. Mr. Gardner is a son of the Rev. and Mrs. Thomas Gardner, Milwaukee, and the bride is a daughter of Mr. and Mrs. Damian Geyer, Green Bay.

Myers Paper Mill Receiver Dismissed

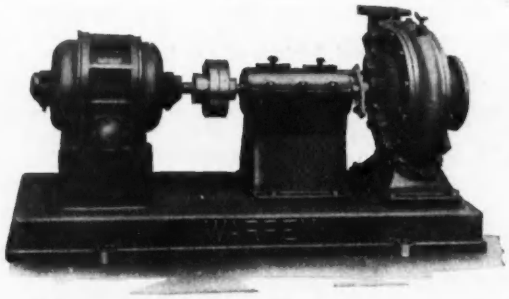
[FROM OUR REGULAR CORRESPONDENT]

DENVER, Col., October 9, 1925.—Judge George F. Dunklee in the District Court of Denver, Colorado, received and accepted the report of Wilbur F. Denious receiver for the Myers Pulp and Paper Mill, and on petition of the receiver, dismissed him. The property was sold at public auction of May 27 this year, the price being $370,000 and the purchasers were Charles B. Myers former president of the original concern, and Joseph Buchalter the original manager. The company from the start did a fair business, but the cost for the completion of the plant went to a figure practically double that of the original intention, and that was reported to have been the stumbling block which caused the receivership.

The plant is said to be increasing its output and sales and bids fair to prove a paying proposition.


RENEWABLE SPLIT SHELL BABBITT LINED RING OILING BEARINGS. MULTI-COLLAR MARINE THRUST BEARING
VOLUTE CASING REMOVABLE COVER SPLIT DIAGONALLY
HEAVY STEEL SHAFT BRONZE COVERED
RENEWABLE PROTECTING LINERS
FLEXIBLE COUPLING
SEMI-OPEN IMPELLER WITH LATERALLY PROPORTIONED PASSAGES
LARGE SUCTION OPENING WITH SIDE ENTRANCE PERMITTING DIRECT AND UNRESTRICTED FLOW OF PULPED STOCK
SINGLE SUCTION CENTRIFUGAL PUMP Bar Direct Connection TYPE "SCD"

Proof!



We don't ask you to take our word for it that the Warren Stuff Pump establishes new and higher standards of efficiency in handling pulped stocks. Look at the drawing and see the reasons for yourself. Compare it with any stuff pump you have.

How much does more efficient stock handling and elimination of pump maintenance troubles mean to you?

Warren Advantages

1. **ADAPTABILITY.** Arranged for direct connection or belt drive. Discharge nozzle on either right or left hand side, horizontal or vertical.

2. **DURABILITY.** Massive construction throughout. Oversize bearings, removable, split shell, ring oiling type. Heavy duty marine type thrust bearing. Removable case liners to assure close running clearance for the life of the pump.

3. **CONVENIENCE.** Clogging minimized. Interior accessible without disturbing piping. Split packing gland.

Warren
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Ontario Paper Mills Report Better Business

Recently Negotiated Treaty Between Canada and Australia is Having Good Effect on the Paper Industry—Fair Business Being Done in Rag and Paper Stock Market—Beaver Wood Fibre Co. Making Rapid Progress in Installation of Its News Print Machine

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 12, 1925.—The majority of jobbers agree that there is an improvement in business. Those concerns, which cater to pre-Christmas requirements, say that the trade is setting in early. Crepe tissue paper specialties, cards, papeteries, and other lines are moving freely. Those houses, which handle school supplies, etc., also are busy. For the most part, book paper mills are quite active. The recently negotiated treaty between Canada and Australia is having a good effect on the paper industry. The treaty went into effect on October 1. Book mills, as well as large newsprint producers, are getting ready to make shipments. Orders have already been received for the cheaper grades of book paper, which could not be marketed in Australia before the completion of the new treaty. Most book mills have considerable tonnage ahead in orders and are running very near to capacity. Aside from some minor readjustments, prices in all lines of book and writing papers have held firmly all the season. Bonds, ledgers and other lines of flat papers have taken on a tone and there should be a distinct improvement from this out.

Paper box plants are making fair requisitions for stock which is keeping the board mills busy. Although prices across the line have increased there has been no advance as yet in Canadian board. Quotations may go up soon but some consumers have contracts which protect them until the end of the present year. In other lines such as kraft, wrappings, flour sacks, paper bags, bristols, blotters, a slight increase in demand is reported.

In the rag and paper stock market, there is a fair business being done. The call for cotton rags is good but roofing stock is low in price and rather stagnant. Prices are not inclined to fluctuate on various kinds of stock such as was the case a few weeks ago. This is a source of satisfaction to both buyers and sellers.

In pulp, prices are firm and large consumers are not able to get any heavy supplies under the quotable market values. There are not big stocks on hand either with the mills or consumers. Ground wood is selling at $30. per ton, bleached from $75. to $80., and unbleached from $60 to $65.

With the slightly better industrial conditions prevailing, the paper market generally is feeling the effect. One of the last businesses connected with the trade, which so far has not gained much impetus, is the commercial printing line, although engravers and lithographers have experienced quite a change in the state of affairs during the past few days. The outlook is getting brighter all the while after a rather long spell of quietness.

Better Times in Prospect

Hon. Charles McCrea, Ontario, Minister of Mines, speaking at Port Arthur last week, said, as a result of the timber policy of the government, and the forthcoming sales of several limits, there would be industrial expansion of a permanent character in Northern Ontario. Mr. McCrea stated that he had been authorized by Premier Ferguson to say that, behind the industries, which would result from the awarding of the tenders in the near future for large pulp wood and timber concessions, there would be a sufficient supply of raw material to put the resultant plants on a permanent footing, which would eventuate in great advantage to many centres in the northern part of the province.

Big Formation Flight of Seaplanes

After the freeze-up, the flying machines of the Ontario Air Service, which have done much effective work all summer in fire patrol and surveys, will assemble at Sault Ste. Marie. There will then be staged a manoeuver, which will be the biggest formation flight of flying machine boats ever held by a commercial flying body in Canada. There will be sixteen planes in the flight which will be conducted over the St. Mary's river. One purpose of the flight is to test the various machines after they have been undergoing their season's work.

Sears Co. Formed

The Sears Company, Toronto, has been formed to handle various lines of printing and engraving equipment as well as installations for paper box and paper manufacturers. Thomas H. Sears is president of the new organization and William H. Sears, vice president and general manager. Frank H. Sears, secretary-treasurer of the company, will be stationed in Montreal where he will also be manager of the warehouse.

New Plant to Start Soon

John Ball, formerly with Bathurst Company, Bathurst, N. B., will have charge of the new news print department of the Beaver Wood Fibre Company, Thorold, Ont. The company is two months ahead of its schedule in installing the new news print machine, which will turn out about seventy tons a day and will be in operation next month.

To Check Importation of Printed Matter

At a joint meeting of the Allied Printing Trades Council and the Toronto Typothetae held recently, the question of the amount of printed and lithographed matter imported into Canada from other countries was discussed. An effort will be made to curtail such importation. Statistics were presented which showed that the aggregate of such matter coming into Canada should be checked.

Notes and Jottings of the Industry

A. C. Hunt, of Winnipeg, vice president of the Canadian Paper Trade Association, was a business visitor to Toronto last week.

C. D. Falkenburg, of Price Bros. & Co., Quebec city, was in Toronto lately calling upon the trade.

F. L. Ratcliff, of the Ratcliff Paper Company, Toronto, spent the past week in Montreal on a business trip.

C. W. Graham, of Hamilton, former president of the Canadian Paper Trade Association, was in Toronto last week attending a meeting of the Ontario section.

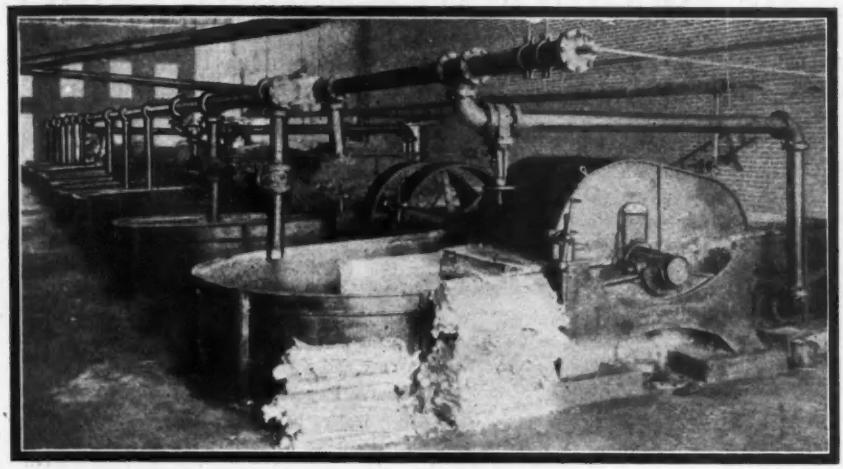
J. H. Matheson, eastern representative of Buntin-Reid Company, Toronto, has resigned and will leave in a few days to join his father who is in business in the United States.

M. C. Avis, of Seymour-Sheldon Company, London, Eng., which is a large indent house, is spending a few days in Toronto and other cities endeavoring to secure representation of a number of Canadian paper mills.

Hamilton K. Woodruff, who is a member of the Woodruff family, long associated with the Lincoln paper mills, St. Catherines, has been nominated as the Liberal candidate in that city in the forthcoming federal elections.

Through the cooperation of the Canadian Trade Commissioner in Mexico, the Provincial Paper Mills, Toronto, have established a selling connection in that country for certain grades of paper manufactured at the Port Arthur plant of the company.

A federal charter has been granted to Canadian Scottish Paper Company, Toronto, with a capital stock of ten thousand preference shares of fifteen dollars each and ten thousand shares of no nominal or par value.



Consolidated
Paper Co.
Monroe.

MICHIGAN

Here they make an immense tonnage of Container Board in Dilts Beating Engines.

Michigan builds motor cars for the whole world, but she comes to Dilts for Beating Engines.*

"Their paper is made in their beaters," and they make good paper up in Michigan in their Dilts beaters.

* There are 71 Dilts beating engines in Monroe, Michigan.

The Dilts approved NEW TYPE Beating Engine embodies all that is desirable in a real beating engine. As one superintendent expressed it, "they are as nearly perfect as a beating engine ever will be."

They accomplish Fast Circulation, Rapid Mixing and Beating, Heavy Furnish, Quick Dumping, and with **no increase in power consumption.** They are truly remarkable beaters.

Send for list of users, names of recent purchasers, and list of our unshipped orders. You will certainly be interested in the Dilts approved NEW TYPE Beating Engines.

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

Paper Merchants In Chicago Are More Hopeful

Considerable Improvement in Demand, Especially for Fine Papers, Has Been Evident Since Early in September—Many Paper Men at Fall Conference of National Paper Trade Association Express Confidence That Improvement Will Continue

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, October 12, 1925.—A spirit of optimism prevails in the Chicago paper market. Local paper merchants say that they are disappointed with the returns of the past few weeks, but are confident that the better times they have been awaiting are "just around the corner." Immediately after September, business in the fine paper division of the industry picked up considerably not to the extent that was hoped for, but the spurt led everyone to believe that the business world was making a determined effort to get back to normal.

Many Paper Men in City

During the first four days of last week, Chicago was the Mecca of the paper industry. Not only were paper merchants present, but manufacturers and their representatives were very much in evidence at the Drake Hotel during the sessions of the National Paper Trade Association's fall conference. Practically everyone present expressed the same opinion with regards to business, "Business at present is only fair but it is bound to improve in the next few weeks." This sentiment was repeated by men in all branches of the industry. One paper bag manufacturer in the city for the convention said he was going home fully confident that orders will soon be coming through in a satisfying manner. He further said that while business has been comparatively dull, as he reflected over the past few months, he could see bright spots when for several days at the time, it looked as though the good old days had returned. He called attention to the fact that mankind is prone to overlook the pleasant things of life, while he usually exaggerates the disagreeable experiences, such as those confronting the industry at present, when overhead seems to be an obstacle to the successful operation of business. The overhead is the same as it has been, but a shortage of orders has increased the percentage of the overhead costs.

Printers Are Busier

A survey of printing establishments reveals the fact that more printers are at work today than has been the case since early last spring. Printers state that there is nothing startling in the way of big orders or large runs, but the regular business has increased, compelling additional workmen to turn out the finished product. As this increased activity on the part of the printers was in evidence a month or so ago, it is believed that whatever stocks may have been on hand are about depleted. Fine paper merchants are satisfied that orders from job shops will soon be placed on a more definite and a more regular buying basis.

Fine paper prices remain unchanged. There seems to be a desire on the part of some mills to advance prices, but local merchants believe that nothing will be done along this line, at least until the trade shows some real improvement

Chicago Paper Co. Issues Catalogue

The Chicago Paper Company has just issued a new catalogue and price list that is unique. The company also adopted an unusual manner in which to distribute this catalogue. Instead of sending it broadcast to the trade, it prepared an attractive folder announcement, with an attached mailing card to be filled in with the individual or firm name of those desiring the book. Naturally, there was a heavy demand. Having had their curiosity aroused by the previous announcement, and desiring to see this new type of catalogue, the recipients gave it unusual attention immediately upon arrival. In this catalogue all essential information on the complete line handled by the company, including hundreds of varieties and brands of paper for all printing purposes, including description, sizes and prices, is systematically classified and indexed for ready reference. In describing it, an official of the company stated: "There is no longer need for hunting around for a separate price list; the prices are where they belong, in big readable type, right where they belong; with the description of each item. It includes everything the paper buyer wants to know, arranged so that he can find it instantly." The book is just the right size for practical everyday use and a very convenient catalog and price list.

Coarse Papers in Better Position

The coarse paper dealers have come out of the summer market with splendid reports. Most of them made money; some of them did not, but the orders were available and the hustlers got them. Since the recent price advance, there has been a little lull, but it has been considered temporary, and even now the signs of the times point to increased activity in this branch of the industry.

The old paper market is beginning to show signs of life. Paper gatherers are specially active. While prices are not as attractive as had been hoped, still there is some selling. Many of the smaller dealers, however, are holding on to their accumulations, with the certain knowledge that prices are bound to improve.

F. G. Jones Opens Office in Conway Bldg.

F. G. Jones, who for some time has been associated with Edward G. Burger, has recently opened an office at 1566 Conway Building, as western representative of the Paper City Manufacturing Company, Holyoke, Mass., makers of fancy paper for box covers.

Saniwax Paper Co. Expanding

KALAMAZOO, Mich., October 12, 1925.—The plant of the Saniwax Paper Company, 422-452 North Park Street, is one of the important industrial units' allied with the paper industry in this city. In recent years the development has been noticeable, necessitating the addition of a large amount of equipment and machinery to handle the ever increasing output.

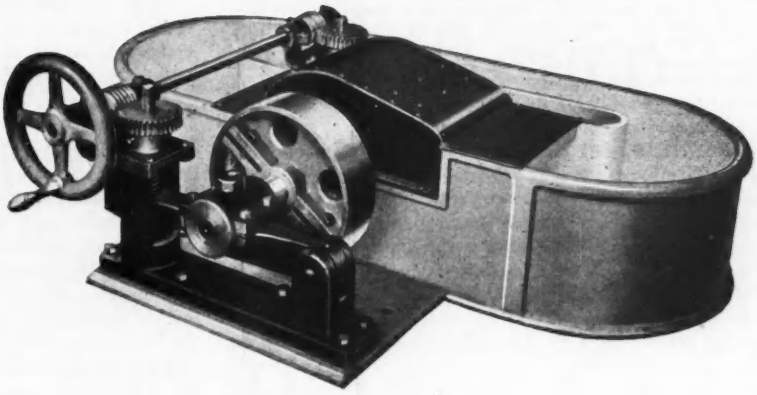
The press line includes seven automatic multiple color presses of the latest design. These are reinforced by a battery of cutters, waxers and other machinery, sufficient to insure an output annually of millions and millions of bread wrappers. Despite the immensity of the output, the plant is so well arranged and so much of the equipment is of the automatic approved type that only 50 employees are required in both factory and office departments.

An improvement just completed is the installation of a new boiler for heating purposes and for generating steam required in drying. The company now has its own stereotyping department, adequately equipped to handle all work in that line. There is also a large vault for stock cuts and plates.

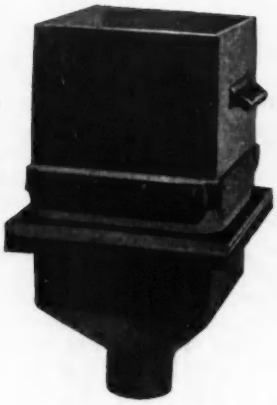
George L. Irvine, seeing the necessity of enlarging his shipping and packing department, is contemplating the erection of a second story addition to part of his plant and the removal of the offices to the new part.

The Saniwax Paper Company was founded in 1914, Mr. Irvine coming to Kalamazoo from Rockford, Ill. at that time. The capital at the outset was $15,000. This was later increased to $80,000 and then to $215,000. Of the last named amount, $200,000 in common stock, $110,000 being subscribed and paid in, with $15,000 preferred, of which $14,000 has been paid in. It is a close corporation the stock of the concern is now held exclusively by those interested as the active management of the concerns.

In addition to George L. Irvine, who is president, the other officers are C. W. Clement, vice-president and Stuart Irvine, secretary-treasurer.



Niagara Type Experimental Beater.



Valley Sheet Mould

VALLEY LABORATORY EQUIPMENT

Valley Laboratory Equipment was developed by leading practical and technical men in the paper industry, and in six years of successful operation it has met with the approval of numerous manufacturers.

Valley Hydraulic Press

This equipment makes possible the more accurate recording of results, the maintenance of standards set by the mill, and provides the paper maker with extensive knowledge regarding the properties and possibilities of the materials that he buys.

Valley Laboratory Equipment includes exclusive devices and features for strength testing purposes, which allow for positive control of every detail in producing hand made sheets, so each is made under comparative conditions.

Valley Hot Plate

Tests executed on paper made with Valley Laboratory and Strength Testing Equipment result in a true index of the quality of given materials.

VALLEY IRON WORKS CO.

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Write Today *for* Laboratory Equipment Booklet

Trade-Marks Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade-mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

PREMIER—Ser. No. 210,455 Reg. No. 201,963, Hooper Paper and Twine Company, Inc. For twine and rope.

S. C.—No. 211,247. The Appleford Counter Check Book Company, Ltd., Hamilton, Canada. For bookkeeping blanks, order books, check books, restaurant forms, etc.

SAXON—No. 215,830. Strathmore Paper Company, Mittineague, Mass. For writing paper and mailing envelopes.

GAYLORD BOXES—No. 215,145. Robert Gaylord Incorporated, St. Louis, Mo. For fiber-board boxes.

THE KUMFLAT—No. 215,978. Garment Center Fibre Container Corporation, New York City. For paper or pasteboard shipping boxes.

RAPTITE—No. 215,703. Osborn Paper Company, Marion, Ind. For paper bags.

RAINBOW—No. 190,044. American Tissue Mills, Holyoke, Mass. For crepe paper.

SILK FIBER WRAPPING with representation of a fox—No. 209,031. The Fox Paper Company, Lockland, Ohio. For bleached sulphite wrapping paper.

KEYSTONE BRAND—No. 218,137. Paper Products Manufacturing Company, Swarthmore, Pa. For paper napkins.

OLD LOOM—No. 210,520. Associated Merchandising Corporation, New York City. For boxed writing paper, correspondence cards, and mailing envelopes.

REDISTOK—No. 212,371. Dennison & Sons, Inc., Long Island City, N. Y. For bank notes, checks, drafts, certificate paper, bills of exchange paper, writing paper, ledgers, and bank notes.

PIONEER with picture of a bear—No. 212,993. Blake, Moffit & Towne, San Francisco, Cal. For typewriter paper, manuscript covers; bond, flat and writing papers, and second sheets.

ENSEMBLE—No. 317,478. Old Colony Envelope Company, Westfield, Mass. For correspondence cards and mailing envelopes therefor.

TORRENT—No. 218,559. International Paper Company, New York City. For writing and printing paper.

Say De Grasse Paper Mill May Be Closed

The following under a Canton, N. Y. date line was printed in a recent issue of the Syracuse Journal:

"The decision rendered by Judge James C. Dolan, favoring Murray A. Dodds of this village in his litigation against the De Grasse Paper Company, is regarded by the St. Lawrence Valley residents as likely to have a grave effect on the future of the De Grasse plant at Pyrites. The following sums up the situation:

"Is the De Grasse Paper Company to shut down its mill at Pyrites? Will the big plant be sold? There is ground for feeling that these two questions are not mere fancies; that they are immediate. To Canton they are of vital importance. Either action must be viewed with grave concern. Today, although the majority of our citizens appear to be blissfully ignorant or want to be, the future of Canton's one and only important manufacturing plant may rest in the balance.

"Last week Judge James C. Dolan as referee in the litigation between Murray A. Dodds of Canton vs. the De Grasse Paper Company, rendered a decision in favor of the former, on the two counts argued, one granting an injunction against the company restraining it from placing wood fiber or pulp in the river after Jan. 1, 1926; the second awarding Mr. Dodds $1,000 for alleged damages to his farm lands. Other claimants have similar cases already under way, having held them in abeyance awaiting this decision. A long and discouraging series of litigations now confronts the De Grasse company. In addition, the injunction is viewed in some circles as of much graver importance than the possible litigations.

"It has become rumored about town during the last week that representatives of the International Paper Company have been inventorying the De Grasse plant, pulp wood supplies on hand and pulp wood lands in Canada, with a view to possible negotiations or purchasing the properties. Such a sale will not be viewed with local enthusiasm.

"It would undoubtedly mean the closing down of the mill. As is so well known there is perpetual warfare between the International Company and the paper makers union. The minute that the International takes over the De Grasse Company it is argued that a strike would be immediate and would last indefinitely.

"In addition gossip has it that the International people are more interested in the De Grasse Company's extensive pulp land holdings in Canada than they are in the local mill. However, this may all be hearsay. The Pyrites office of the De Grasse Company has nothing to say on the matter and no official statement is forthcoming from other sources.

"The De Grasse Paper Company is the single largest taxpayer in the town of Canton. It is the sole means of support of the village of Pyrites, a village of about 600 inhabitants. Its payroll runs about $15,000 weekly."

Boston Paper Demand is Improved

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 12, 1925.—With few exceptions local paper men report a continuance of wholesome business—a business that started about the second week in September. A rainy day or two, topped by an unseasonal and unprecedented blizzard on the last day of the week retarded the trade somewhat but despite climatic conditions the week showed up well. While there is no real boom under way the local conditions are most encouraging. Everybody seems to be sharing in the better times in some way.

Prices remain about the same. The fine grades division seems to take top place in the amount of business being done. This it is explained, is due chiefly to renewed activities among the printers who now are having heavy demands made upon them from all sources, including, social, political, commercial and professional. Advertising agencies are at their peak, reports show, and direct-by-mail advertising is forging ahead. All of these activities demand paper. Therefore the merchants in the so-called fine grades branch of the trade are kept busy. In a few cases staffs have been augmented.

The paper box manufacturers are enjoying better business than they have for some time. Holiday orders are being placed. Some new and startling varieties are promised, if the special orders that are being placed are any barometer. With general business on the up grade these merchants look for a lively business right up to the first of the year.

The old paper and raw stock houses show a slightly better trend upward but not enough to cause much rejoicing. Not until the mills come into the market will these dealers show much headway.

Kraft and other coarse papers remain about the same, business being a bit spotty but improved considerably over the last few months. On the whole Boston's trade is better than it has been for a long time and the trade feels that already 1925 has taken itself out of the "lean year" class.

Now Calcasieu Sulphate Paper Co.

LAKE CHARLES, La., October 16, 1925.—The Calcasieu Sulphate Paper Company, Inc., has been organized by the interests connected with the Industrial Lumber company, Elizabeth, to take over the paper plant of the Calcasieu Paper Manufacturing Company. The new corporation has an authorized capital of $1,000,000, and will rebuild the present plant into a modern sulphate process plant.

BLEACHED and UNBLEACHED
SULPHITES
KRAFT PULPS
GROUND WOOD
NORRONA
PULP STONES

PERKINS-GOODWIN CO.
33 WEST 42nd STREET
NEW YORK

PAPER
PRINTING PAPER
of
EVERY DESCRIPTION

Paper Concerns Protest Tax Assessments

[FROM OUR REGULAR CORRESPONDENT]

COHOES, N. Y., October 12, 1925.—The Mohawk Papermakers Inc., and James Gledhill & Son Wall Paper Manufacturers, both with large plants in this city, have started court actions to compel the Cohoes Board of Assessors to reduce the assessments levied against their mills. The two corporations claim that the valuation upon which they are now taxed by the city is "unjust, excessive and discriminatory." The assessments on the two plants were increased greatly last year when a new city tax map was made. The increase in the case of the Gledhill Corporation being more than 100 per cent.

Attorney Walter H. Wertime, of this city, acting for the Gledhill Company appeared before Supreme Court Justice Ellis Staley and secured a writ of certiorari directing local city officials to show cause why the Gledhill assessment should not be reduced. The order is returnable before Judge Staley at a special term of Supreme Court in Albany October 24. The present assessment of the Gledhill Corporation is $161,000 which the company seeks to have reduced to $80,000. The company contends that when the Gledhill plant was erected in this city a few years ago it was given assurance by city authorities that the plant would not be taxed above this figure.

The Mohawk Papermakers Inc. through Attorney Thomas O'Connor, of Waterford, secured a similar order from Supreme Court Judge James V. Coffey at a special term in Albany. This writ is also returnable October 24 before Judge Staley in Albany. The Mohawk Corporation seeks to have its assessments reduced from $210,000 on the brick paper mill structure and $9,000 on the railroad siding and switches on its property, to a total of $169,-972.62. The corporation does not ask for any reduction in the present valuation of the railroad siding as, according to the complaint, these figures constitute a fair valuation.

Both concerns appeared before the Cohoes Board of Assessors in September and protested against their assessments. Their petitions for a reduction in the present figures were refused and the court actions followed. Both firms were among a number of industrial concerns with plants in this city, which secured similar court orders in 1924 but no effort was made to press these orders. Both Mohawk Papermakers Inc. and James Gledhill & Son paid their city taxes for 1925 under protest. If the present court actions are successful in securing a reduction of the assessment it is understood that both firms will be entitled to a refund from the city.

Michigan to Get English Clay Direct

KALAMAZOO, Mich., October 12, 1925.—South Haven is looking forward to handling some real import business during 1926, according to reports from the lakeside city. The commodity in question, English China clay, easily in excess of 10,000 tons, will be for Kalamazoo paper mills. It is a necessary commodity in the manufacture of coated paper.

T. M. Sawyer, secretary of the South Haven Chomber of Commerce, reports that a fleet of seven steamships has been chartered for the 1926 season and will bring clay direct from the mines in Cornwall, England, to the Michigan port, where it will be reshipped in cars to Kalamazoo.

South Haven received its first import cargo, October 5, it being consigned to W. E. Knight of this city, sales representative of English clay producers. For two years Mr. Knight has been directly concerned with promoting import business by way of the Great Lakes-St. Lawrence waterway route. In 1924 he opened negotiations and received one ship, which unloaded at Michigan City. Four ships were chartered for 1925, three unloading at the Indiana port, the fourth at South Haven. The latter community has seen the advantage to be gained through this heavy import business and has been able to meet Mr. Knight's requirements for efficient unloading facilities and sidetracks direct to the docks.

Mr. Knight has so far been able to give the boats a return load to European ports. That is one of the provisions in chartering those vessels.

While nothing has as yet been done to ship German and Scandinavian pulp direct from the manufacturers to mills in the Kalamazoo valley, such shipments have been successfully handled for mills in Monroe and Detroit.

Wood Pulp Market Active in Sweden

WASHINGTON, D. C., October 7, 1925.—Present activities in the wood pulp market of Sweden are chiefly directed toward the 1926 season, Chief Consul General Dawson reports to the Paper Division of the Department of Commerce. He continues:

At the end of July reliable trade circles estimated the quantity of sulphite pulp wood sold for delivery in 1925 at 710,000 metric tons, or fully 95 per cent of the year's estimated output. Recent sales for delivery this year have been made chiefly to the European Continent, while the greater portion of the quantity sold for delivery in 1926 is destined for Great Britain. It is estimated that 70,000 metric tons of strong and bleaching sulphite and 10,000 tons of strong sulphate were sold during the first half of August for delivery in 1926.

Prices of chemical pulp show very little difference over a month ago, with the exception of slight advances in the prices of bleaching sulphite and kraft pulp, the latest quotations being as follows:

Bleaching sulphite, $3.06-$3.17 per 100 pounds c.i.f. English port.
Strong sulphite, $2.70-$2.87 per 100 pounds c.i.f. English port.
Bleaching sulphate, $3.20-$3.31 per 100 pounds c.i.f. English port.
Kraft pulp, $2.95-$3.11 per 100 pounds c.i.f. English port.

Prices to American buyers show a rise in strong sulphite, which is now quoted at $2.85 to $3.05, while the price of kraft pulp is unchanged at $3.00 per 100 pounds, ex dock.

The low water in the rivers resulting from the drought this summer has hampered activities in the mechanical pulp industry, causing a rise in prices. Fair quantities have been sold for delivery both this year and in 1926, at prices ranging from 83 cents to 85 cents per 100 pounds c.i.f. English port. The price of dry mechanical pulp also shows an advance, $1.58 to $1.64 per 100 pounds f.o.b. Goteborg being quoted at present.

Export shipments of wood pulp were considerably smaller in July this year than in the same period last year, somewhat reducing the gain previously shown. During the first seven months of 1925 exports of wood pulp totaled 592,933 metric tons (dry weight) as compared with 531,605 tons during the corresponding period in 1924.

Bids and Awards for Government Paper

WASHINGTON, D. C., October 14, 1925.—The Government Printing Office will receive bids on October 16 for 40,000 pounds of 21½ x 32½ ground wood mimeograph paper. Bids will also be received on the same date for 25 reams of 22 x 28 white railroad board.

The Government Printing Office will receive bids on October 19 for 500,000 pounds of standard newsprint paper in 48" rolls.

The Government Printing Office will receive bids on October 19 for 10,000 pounds (200 reams) of 25 x 38 to 50 machine finish salmon book paper.

Doebler & Mudge have been awarded the contract for furnishing the Government Printing Office with 12,500 pounds (1000 reams) of 21 x 32, 12½, white record manifold bond paper at 38.54 cents per pound, bids for which were received on September 18.

The Aetna Paper Company will furnish 12,900 pounds (300 reams) of 21 x 32, 43, white bond paper at 14.91 cents per pound, bids for which were received on September 23.

The American Writing Paper Company will furnish 250 reams of 21½ x 32½, 37, green mimeograph paper at 8.25 cents per pounds, and Lindemyr & Harker will furnish 3000 sheets of 24 x 36, 108, brown cloth lined cover paper at $72 per thousand. Bids for these items were received on September 25.

Better Browns on Paper

FOR brown papers where better fastness properties are required, we recommend the use of National Erie Browns. Alone or topped with suitable dyes, this group of colors produces attractive shades at low cost.

Samples with full directions will be supplied on request or matches will be made on your paper stock in our laboratories.

National Aniline & Chemical Co., Inc.
40 Rector Street, New York, N. Y.

BOSTON	PHILADELPHIA	SAN FRANCISCO
PROVIDENCE	CHICAGO	MONTREAL
HARTFORD	CHARLOTTE	TORONTO

NATIONAL DYES

New York Trade Jottings

Wilson Compton, secretary of the National Lumber Manufacturers Association, has been visiting New York.

* * *

Dr. Otto Kress, of the Thilmany Pulp and Paper Company, of Kaukauna, Wis., has been visiting New York in the interests of his organization.

* * *

W. A. Gateley, of the Simplified Practice Division of the Department of Commerce, Washington, D. C., visited several of his friends in the New York paper trade, last week.

* * *

H. H. Curtis, sales manager of the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., has been studying conditions in the New York market.

* * *

G. Meerbergen, assistant general manager of the Newfoundland Power and Paper Company, is in New York this week, conferring with their selling agents here, the Bowater Paper Company, Inc., of 342 Madison Avenue.

* * *

W. Bersch, of 167 De Graw Avenue, Teaneck, N. J., has resigned the post of treasurer and director of William Hartman & Co., Inc., 342 Madison Avenue, New York, and is now connected with Fred C. Strype, paper and twine merchants, 320 Broadway.

* * *

The 1925 Electrical Exposition opened yesterday at the Grand Central Palace, New York. The General Electric Company, the Westinghouse Electric and Manufacturing Company, the Autocar Sales and Service Company and other exhibitors are featuring displays of special interest to the paper industry.

* * *

Jack Deutch, of the Deutch Brothers Manufacturing Company, of 343 Greenwich street, New York, and Mrs. Deutch, have been celebrating the 25th anniversary of their wedding, at Atlantic City. Mr. and Mrs. Deutch were the recipients of heartfelt congratulations from their many friends.

* * *

The Marx Maier Paper Mill Supply Corporation has opened offices at 15 East 26th Street, New York, and will represent the well known house of Marx Maier, established in 1848, and maintaining packing plants at Mannheim and Berlin, Germany. James Rosenberg, long identified with the imported rag and paper stock business, and well known throughout the paper industry, has been appointed to the post of manager of the New York office. He will be assisted by M. Goudswaard, who gained his experience at the foreign warehouses of the organization.

* * *

The organization of the H. J. Grey Company, of 228-238 East 44th street, New York, plans an interesting celebration of its 5th anniversary. From the time of its inauguration on November 1, 1920, it has constantly increased its clientele and is now in a very strong position. In appreciation of the wonderful cooperation the company has received from its customers and friends, the management plans to entertain them on Tuesday evening, November 17, at a theatre party. For this purpose, the H. J. Grey Company has purchased the entire seating capacity of the Chanin Theatre, where the popular comedy, "Is Zat So" is running. The theatre is located at 46th street, west of Broadway, and accommodates about 1,500.

Madawaska Mill to Make Sulphite Paper

Through erroneous reports an impression has been created that the pulp and paper mills of the Fraser Companies, Ltd., located at Edmonton, Canada, and Madawaska, Maine, are to manufacture book papers. The paper mill at Madawaska will be devoted exclusively to the manufacture of 100 per cent sulphite papers, and will consume all of the sulphite pulp wood at the Edmonton plant, with the exception of a surplus of about 100 tons daily, which will be marketed through the usual channels.

To Start Work on St. Helena Plant

PORTLAND, Ore., October 10, 1925.—Plans are to be drawn at once for the new St. Helena Pulp and Paper Company's plant, St. Helen's, Ore., and ground will be broken at once. It is anticipated by the company that the first unit will be ready for operation by November, 1926.

As previously announced in the tentative news of this new company the Hawley Pulp and Paper Company interests have the controlling stock in the organization. Willard P. Hawley, Sr., is president of both companies. Willard P. Hawley, Jr., is vice-president and general manager of the Hawley Pulp and Paper Company of Oregon City and is vice-president of the St. Helen's Pulp and Paper Company.

The new plant to be built will cost $1,500,000. The construction will be concrete, absolutely fireproof and of latest modern design and equipment in every detail. Certain pieces of the machinery will be manufactured in Germany because they cannot be obtained elsewhere.

Max Oberdorfer has been engaged to design the new mill, take charge of its construction and later to be in charge of the plant. Mr. Oberdorfer designed the large paper mill at Manistee, Mich., superintended its construction and has been in charge of the plant since that time.

The St. Helen's Pulp and Paper mill will employ about 300 men, turning out 50 tons of finished product each twenty-four hours.

Five other units will be added to the company's project as time progresses and expansion is justified.

New Representatives of Am. Engineering Co.

The American Engineering Company, of Philadelphia, announces the following recently appointed representatives for the sale of its "Lo-Hed" electric hoist; All-Steel Equipment Company, 86 State Street, Albany, N. Y.; American Machinery and Supply Company, 1113 Howard Street, Omaha, Neb.; Ambler & Riter, Kearns Building, Salt Lake City, Utah; Dravo-Doyle Company, 749 Leader-News Building, Cleveland, Ohio, and 705 Merchants Bank Building, Indianapolis, Ind.; Factory Supply Company, Inc., 2122 Avenue D., Birmingham, Ala.; C. Fuson Company, 404 Fidelity Bank Building, Memphis, Tenn.; Gibbens & Gorden, Inc., 534 Canal Street New Orleans, La.; Industrial Products Corporation, 1205 Chamber of Commerce, Pittsburgh, Pa.; Menner & Kimball, Syndicate Trust Building, St. Louis, Mo.; Standard Steel and Supply Company, 29th Street and C. & O. R. R., Ashland, Ky.; C. Turner & Co., Power Building, Chattanooga, Tenn.; S. R. Vanderbeck, 20-22 S. 15th Street, Philadelphia, Pa.; Wylie Brothers, 511 N. Main Street, Oklahoma City, Okla. A representative of the "Lo-Hed" hoist department also has been added to the sales staff of the American Engineering Company's Chicago Office, 1401-1402 Marquette Building.

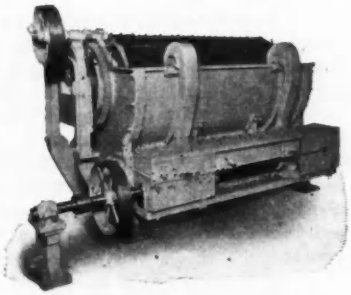
Kennesaw Paper Co. Property May Be Sold

ATLANTA, Ga., October 14, 1925.—The properties of the Kennesaw Paper Company are to be sold by the Sheriff on November 3, under an order issued late Thursday by Judge E. D. Thomas, in Superior Court, to pay indebtedness said to amount to more than $90,000.

This action was taken on a petition by Ernest Woodruff, representing the Security Mortgage Company. It was based on alleged unpaid notes and accrued interest. The paper company failed to file an answer to the suit, and judgment was taken by default.

Does Clean Paper Interest You?

Cleanliness in a sheet of paper will be assured if the stock passes through a



"Moore & White" Improved Flat Plate Rotary Screen

PRODUCTION WILL BE INCREASED—DIRT AND LUMPS WILL BE ABSOLUTELY ELIMINATED —OPERATION WILL BE SMOOTHER

The Moore & White Co.,
Philadelphia, Pa.
Gentlemen:

The two Moore & White Company rotary screens, installed in June, have just completed their first full month of operation. They have proven completely satisfactory and, I am happy to say, the production for the month was the highest ever obtained on the machine.

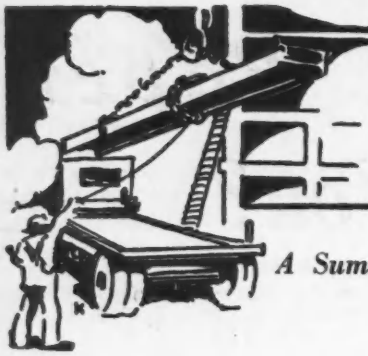
Yours very truly,
(Name of Mill on Request.)

Mills now using "Moore & White" Rotary Screens gladly testify to the excellent results obtained by their use on all grades of paper. ***Write us for complete information.***

The Moore & White Co.

Established 1885

North Philadelphia Station, Penna. R. R., Philadelphia, U. S. A.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Plattsburg, N. Y.—The Lake Champlain Pulp and Paper Company has awarded a general contract to J. J. Fitzpatrick & Sons, Bridge street, for a new one-story addition to its mill, to be 80 x 100 feet, estimated to cost about $50,000, including improvements in the present plant. The project will be placed under way at once.

Whippany, N. J.—The United Paper Board Company has completed plans and will proceed with the rebuilding of the portion of its local Hanover mill, destroyed by fire a number of weeks ago. The new structure will be reinforced-concrete and brick, estimated to cost about $40,000. Additional equipment will be installed. A general building contract has been awarded to Dominick Bontempo, Morristown, N. J.

Chicago, Ill.—The Waterway Paper Products Company, 3201 South Kedzie avenue, has awarded a general contract to the Schmidt Brothers Construction Company, 22 East Huron street, for its proposed one and two-story addition, 73 x 80 feet, reported to cost in excess of $50,000. It will be used for general operating service. D. H. Burnham & Company, 160 North La Salle street, are architects. W. A. Strong is president.

St. Paul, Minn.—The Minnesota Mining and Manufacturing Company, Seventh and Fauquier streets, manufacturer of emery paper and kindred products, has awarded a general contract to Lovering & Longbotham, Builders' Exchange Building, for a proposed two-story and basement addition to cost about $32,000. Work will proceed at once. Toltz, King & Day, Inc., Builders' Exchange Building, is architect.

St. Louis, Mo.—The St. Louis Label Works, Inc., 925 North Eleventh street, has begun work on its proposed new three-story plant at North Market and Glasgow streets, to be 80 x 180 feet, estimated to cost $100,000, with equipment. It is proposed to arrange for the machinery installation at an early date.

Otsego, Mich.—Bondholders of the Wolverine Paper Company have acquired the local mill and equipment at a bankruptcy sale for a consideration of $60,000. Plans are said to be under consideration for a reorganization of the company and the operation of the plant.

Bellingham, Wash.—The Pacific Coast Paper Mills Company has completed plans for the construction of a new one-story mill unit on local site, estimated to cost $80,000, and will proceed with erection at an early date. A list of equipment to be installed is being arranged. T. F. Doan, Sunset Building, is architect, in charge. The company was incorporated recently by J. J. and M. F. Herb, and George H. Bacon.

Laurel, Miss.—The Mason Fiber Company has completed plans and will proceed with the erection of a new local plant for the manufacture of insulating wall board, wall paper and kindred products, utilizing sawmill waste as a source of raw material. The initial plant will include a number of buildings, and is reported to cost in excess of $150,000, including equipment.

Alton, Ill.—The Alton Boxboard and Paper Company is said to have plans nearly completion for the early resumption of operations in connection with the rebuilding of the portion of its plant destroyed by fire a number of weeks ago with loss reported at close to $150,000, including equipment.

Circleville, Ohio.—The Midwest Box Company has work nearing completion on extensions and improvements in its local plant, used for the manufacture of paper boxes and containers, including the remodeling of a portion of the present works. It is purposed to develop increased capacity and efficiency. The De Vore Company, Nicholas Building, Toledo, Ohio, is architect.

St. Louis, Mo.—The Schleicher Paper Box Company, 1811 Chouteau avenue, will soon begin work on its proposed new two-story and basement plant on Bingham street, estimated to cost approximately $100,000, with equipment.

New York, N. Y.—The Union Carbide and Carbon Corporation, 30 East Forty-second street, has acquired the Aktieselakbet Saudefaldene, a large Norwegian paper manufacturing company, with hydroelectric power properties at Sauda, Norway. The new owner is said to be planning to continue the paper company as heretofore, with extension plans to be developed in the future.

Limoilou, Que.—The Anglo-Canadian Pulp and Paper Mill Company, an interest of the Gulf Pulp and Paper Company, 71 St. Peter street, Quebec, has preliminary plans nearing completion for the initial units of its proposed local pulp and paper mills. Finished details will be determined in the near future. The plant will consist of a number of buildings and is reported to cost close to $10,000,000, with machinery. G. F. Hardy, 309 Broadway, New York, is engineer.

New Companies

Rochester, N. Y.—The Great Lakes Paper Corporation has been incorporated with a capital of $100,000, and 2,000 shares of common stock, to manufacture paper products. The incorporators are R. B. Wallace, W. D. Holmes and C. H. Monaghan. The company is represented by W. E. Houpt, Crosby Building, Buffalo, N. Y., attorney.

New Orleans, La.—The Carnival Playing Card Company, Inc., has been incorporated with a capital of $10,000, to manufacture and deal in card and paper specialties. Audrey L. Wallace, 29 Fontainbleau Drive, New Orleans, is president.

Kalamazoo, Mich.—Paper Products, Inc., has been incorporated with a nominal capital of $5,000, to manufacture and deal in paper specialties. The incorporators are Robert T. Walton, Arthur H. Hazzard and William Shakespeare, Jr., 415 West Lovell street, Kalamazoo.

Johnstown, Pa.—The Independent Card Corporation has been incorporated under Delaware laws with capital of $100,000, to manufacture card and paper specialties. The incorporators are J. W. Culp, August Ohlson and M. A. Ohlson, all of Johnstown. The company is represented by the Corporation Trust Company of America, du Pont Building, Wilmington, Del.

New York, N. Y.—The Prominent Folding Box Company has been incorporated with a capital of 10 shares of common stock, no par value, to manufacture paper boxes and containers. The incorporators are J. M. Crane and M. Frieberg. The company is represented by S. I. Goldberg, 276 Fifth avenue, New York.

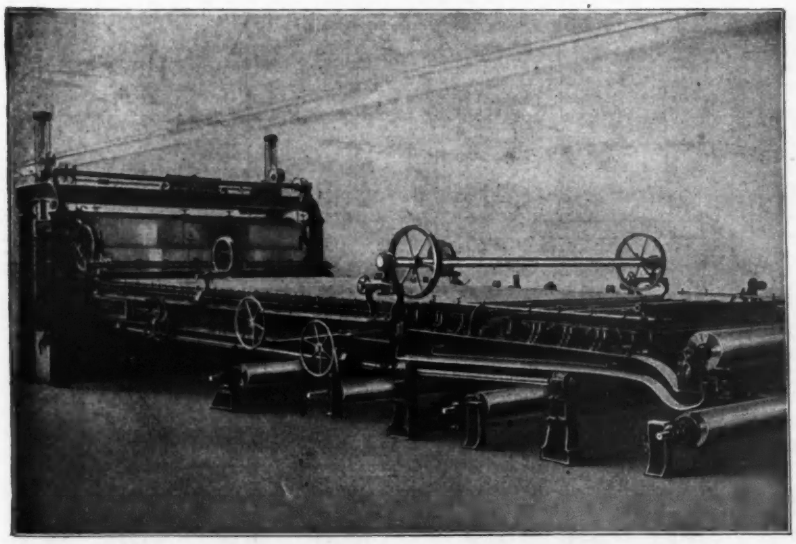
When Obsolescence Steps In—

Efficiency Steps Out

A perusal of the financial statements of American paper mills tells its own story. Invariably they show that where obsolescence prevails in a mill, it is reflected in the balance sheet in no unmistakable terms. It is the same old story—when obsolescence steps in, efficiency steps out.

Industry has been undergoing some remarkable transformations in recent years. America has had to resort to labor-saving equipment to meet the competition of foreign countries where low costs prevail because of cheap labor. And what has been the result? The Journal of Economics illustrates a case in point—that of the American textile industry vs. the Japanese. Under conditions where the American textile worker is paid five to six times as much as his Japanese competitor, the American product, through the use of modern labor-saving equipment, has been produced 28% **cheaper.**

In the progress of paper-making the NEW BELOIT FOURDRINIER has demonstrated a remarkable ability to save labor and time, while production has been speeded up tremendously. Production records have been shattered. In one mill an increase of 15% in production was effected right from the start. Continuous low-cost performance has been maintained. Frequent wire changes have been eliminated, instances being cited where the wire has not been changed in three months under conditions of operation at as high as 700 feet per minute. Through the Adjustable, Removable and Shakeable features, efficiency has been inaugurated such as never before experienced in the industry.



It pays to get the facts. Ask for Bulletin No. 9.

The NEW BELOIT FOURDRINIER

Beloit Iron Works **Beloit, Wis., U. S. A.**

Since 1858 Builders of Paper, Board Mill and Container Plant Machinery

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending August 31, 1925, and for the Eight Months Ending August 31, 1925, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER

PAPER AND MANUFACTURES OF	August				Eight Months Ending August 31			
	1924		1925		1924		1925	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper, except printed matter (total)	.....	9,241,475	.....	9,498,805	.....	78,684,725	.....	78,891,825
Printing paper—								
Standard newsprint ....lbs...free	219,916,228	8,043,469	205,482,633	7,435,832	1,793,621,268	67,527,937	1,890,407,345	67,854,323
Imported from—								
Finland	4,559,770	149,052	1,444,958	46,413	51,427,778	1,604,026	32,731,864	1,013,030
Germany	6,334,070	189,615	4,164,547	127,987	63,930,911	1,943,397	35,136,270	1,077,412
Netherlands	227,374	6,023	.....	.....	1,575,128	49,226	697,759	23,557
Norway	3,629,802	118,859	3,165,813	93,951	15,057,247	499,954	27,002,324	819,687
Sweden	13,152,397	395,788	7,160,855	219,866	72,347,932	2,295,034	87,873,622	2,644,592
Canada	191,660,316	7,174,296	189,283,478	6,939,514	1,586,338,151	61,047,638	1,696,315,315	61,902,422
Other countries	352,499	9,836	262,982	8,101	2,944,121	88,662	10,650,191	373,623
All other, n. e. s....lbs...dut.	1,788,304	79,999	1,322,441	61,248	17,636,132	731,908	12,305,440	587,493
Grease-proof and water-proof papers..lbs...dut.	113,179	13,769	86,321	16,083	1,089,427	118,119	1,343,856	173,427
Kraft wrapping paper....lbs...dut.	1,904,203	75,825	706,987	32,935	21,257,894	816,731	10,284,153	424,214
All other wrapping paper....lbs...dut.	1,562,658	64,256	293,457	19,171	16,702,029	642,602	4,182,400	192,135
Writing, drawing, bond, etc....lbs...dut.	327,841	72,735	260,462	67,522	1,709,787	373,154	2,005,424	449,143
Surface coated ....lbs...dut.	121,380	28,436	140,579	44,292	1,196,024	277,145	1,086,606	352,792
Tissue paper ....lbs...dut.	202,348	75,360	166,092	79,348	1,485,151	627,035	1,926,090	829,140
Paper boards—								
Pulp boards in rolls....lbs...dut.	4,177,091	114,840	4,592,308	109,648	54,451,801	1,517,336	48,143,531	1,278,093
Other paper boards, n. e. s....lbs...dut.	1,456,384	31,233	1,616,434	46,384	21,076,083	492,600	21,423,414	516,359
Cigarette paper, cigarette books and covers ....lbs...dut.	654,729	173,546	2,797,850	968,494	6,822,705	1,802,309	7,509,840	2,163,139
Photographic paper ....lbs...dut.	290,077	57,029	185,952	45,199	2,230,564	452,107	2,205,888	484,043
Hanging paper ....lbs...dut.	425,393	18,390	336,939	32,028	8,230,226	392,587	3,421,912	329,305
Paper boxes ....lbs...dut.	139,736	85,472	260,838	141,937	1,103,724	672,746	1,647,716	971,566
Duplex decalcomania, not printed ....lbs...free	6,002	1,083	9,407	2,354	308,578	74,359	277,961	70,802
All other ....dut.	.....	306,033	.....	396,330	.....	2,166,050	.....	2,215,851
Books and other printed matter (total)	.....	785,673	.....	888,614	.....	5,980,675	.....	8,263,272
Books and pamphlets in foreign languages ....lbs...free	198,624	107,307	206,526	117,289	1,508,268	890,655	1,307,090	985,680
Books, maps, music, etc., 20 years old lbs...free	40,078	166,960	46,584	135,553	251,279	994,123	267,228	2,488,472
Other books, etc. ....lbs...free	150,498	117,738	214,601	121,443	1,547,033	1,058,732	1,836,930	1,233,661
Books, pamphlets, and music, n. e. s..lbs...dut.	240,025	176,339	368,720	269,183	2,180,846	1,502,502	2,331,081	1,764,774
Maps, charts, and other printed matter n. e. s. ....dut.	.....	62,865	.....	79,345	.....	538,301	.....	619,505
Lithographically printed matter, n. e. s.—								
Cigar bands, labels, and flaps....lbs...dut.	6,128	9,798	9,210	12,624	78,622	97,872	122,842	104,047
Decalcomanias ....lbs...dut.	21,037	25,931	20,463	33,364	172,580	240,204	192,633	295,157
All other ....dut.	.....	118,735	.....	119,813	.....	658,286	.....	771,976

WOOD PULP

Mechanically ground wood pulp....ton..free	18,241	659,696	26,660	738,725	123,341	4,201,366	183,856	5,379,548
Chemical wood pulp—								
Sulphite, unbleached....ton..free	48,728	2,537,067	44,931	2,598,619	333,619	17,982,524	374,068	20,573,395
Sulphite, bleached ....ton..free	26,533	1,893,635	22,433	1,754,772	169,757	13,245,671	201,289	15,653,399
Total sulphite ....ton	75,261	4,430,702	67,364	4,353,391	503,376	31,228,195	575,357	36,176,794
Imported from—								
Finland	3,401	168,694	2,559	187,225	37,797	$1,970,646	38,759	$2,031,706
Germany	7,243	398,970	3,420	206,037	36,121	2,135,948	40,272	2,502,911
Norway	1,975	148,439	5,993	438,189	29,551	2,172,661	49,248	3,662,187
Sweden	34,361	1,858,207	25,335	1,511,159	172,423	9,871,014	183,759	10,796,983
Canada	24,213	1,615,622	28,745	1,923,518	210,167	14,031,633	241,959	15,953,281
Other countries	4,068	240,770	1,312	87,263	17,407	1,046,293	21,360	1,229,726
Sulphate pulp, unbleached (Kraft pulp ....ton..free	28,443	1,601,662	26,391	1,595,264	171,274	9,935,733	203,791	12,026,987
Imported from—								
Finland	1,083	52,586	1,191	66,755	9,374	451,208	10,360	550,034
Norway	504	30,909	960	58,357	7,722	378,705	5,707	333,295
Sweden	16,780	882,621	11,276	632,608	67,144	3,598,629	98,029	5,414,103
Canada	9,681	610,108	12,457	803,104	84,896	5,394,760	87,349	5,593,630
Other countries	395	25,438	507	34,440	2,138	112,431	2,346	135,925
Sulphate pulp, bleached....ton..free	4,219	223,556	1,673	103,440	10,696	599,660	9,743	600,233
Other pulp ....ton..free	99	2,508	84	11,374	1,388	77,655	1,903	137,611

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Color, dyes, stains, color acids, and color bases, n. e. s. ....lbs...dut.	106,063	155,505	409,235	476,737	1,960,741	2,386,198	4,137,294	5,474,643
Imported from—								
France	1,582	3,960	4,135	5,378	81,223	117,393	94,832	2,127,378
Germany	57,366	74,054	220,758	256,092	950,689	1,075,449	2,112,733	2,914,589
Italy	3,113	5,832	4,679	4,764	105,788	142,678	164,177	200,277
Swizerland	35,801	58,690	162,085	190,714	619,010	807,675	1,331,784	1,664,042
United Kingdom	2,241	3,005	10,805	9,346	54,746	51,882	131,139	108,958
Other countries	5,960	9,964	6,773	10,443	149,285	191,121	302,629	459,399
Casein or lactarene ....lbs...dut.	1,343,695	91,654	1,023,272	89,402	12,874,602	1,035,303	13,725,050	1,089,767
Kaolin, china, and paper clay....ton..dut.	24,096	256,513	22,097	200,082	216,481	2,229,606	231,711	2,188,697

(*Continued on page 46*)

Where Tax Payers Really "Shell Out"

In darkest Africa where white men go only when accompanied by elephant guns and motion picture cameras, the natives still pay their income taxes with cowry shells.

For small change purposes the shells are strung 40 to 100 on a string. Since it requires about 25 of the longer strings to represent one good American dollar in purchasing value, it can be readily seen that the minting of shell money is no lazy man's task. A half-day's honest effort with native tools may enable an industrious workman to prepare 20 or 30c worth of cowry money for circulation.

A native chief, like any other ruler, has his expenses, and one within the present century, is reputed to have collected 30,000,000 shells each year from his subjects.

Shells may very well do for those parts of Africa where the hand of civilization has only lightly touched. But in enlightened America we buy and sell, collect and pay, through the medium of little slips of paper, light, convenient, and more negotiable than the choicest cowry shells.

Hammermill Paper Company

Erie, Pennsylvania

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 44*)

Paper and Manufactures of	August 1924 Quantity	August 1924 Value	August 1925 Quantity	August 1925 Value	Eight Months Ending August 31 1924 Quantity	Eight Months Ending August 31 1924 Value	Eight Months Ending August 31 1925 Quantity	Eight Months Ending August 31 1925 Value
CRUDE PAPER STOCK								
Rags for paper stock ....lbs...free	37,402,900	818,328	50,793,623	1,414,872	304,028,529	6,475,170	403,407,784	11,387,098
Waste bagging, waste paper, etc.....lbs...free	10,015,988	111,020	11,414,209	189,045	68,108,137	788,000	80,378,578	1,382,157
Old rope and all other paper stock...lbs...free	7,583,405	349,727	4,826,429	243,106	65,877,982	3,523,755	46,790,647	2,577,732
EXPORTS—PAPER								
Paper, except printed matter (total)	.....	2,130,172	.....	1,947,646	.....	15,927,121	.....	15,767,630
Printing paper— Newsprint paper ....lbs.	2,949,952	154,487	3,115,857	138,419	23,539,873	1,207,707	28,391,283	1,256,029
Exported to—								
Canada	13,083	1,085	12,937	1,267	734,740	56,910	771,794	54,521
Central America	80,127	4,529	208,020	13,455	499,828	27,811	773,634	40,551
Mexico	258,211	14,834	52,452	2,871	1,641,170	84,278	1,237,353	58,907
Cuba	1,427,891	63,439	866,275	35,956	13,371,292	605,680	12,857,839	530,944
South America	170,537	8,367	531,955	23,781	1,534,313	87,726	5,637,488	256,135
China	354,087	26,463	488,131	17,637	1,683,696	122,904	2,125,564	83,874
Philippine Islands	449,992	20,059	563,929	26,443	2,764,193	135,762	3,651,468	165,446
Other countries	196,024	15,711	392,158	17,009	1,310,041	86,636	1,336,143	65,651
Book paper, not coated....lbs.	1,792,852	203,409	1,322,739	149,955	10,723,807	1,270,584	11,559,419	1,309,603
Exported to—								
United Kingdom	89,531	14,070	6,354	1,350	679,326	133,367	110,939	18,993
Canada	136,849	16,514	101,670	13,762	1,242,461	159,570	1,544,771	184,180
Central America	47,346	5,356	77,555	8,511	381,963	41,608	499,058	53,673
Mexico	88,279	12,058	158,264	16,214	1,032,702	115,020	1,300,935	150,796
Cuba	579,952	59,482	311,419	32,070	2,339,229	263,670	3,241,421	319,426
Argentina	89,952	7,641	38,948	4,771	531,590	49,126	490,925	49,993
Brazil	6,056	664	28,824	3,651	193,171	26,967	238,042	35,498
Venezuela	112,382	11,950	56,777	5,665	394,431	43,187	387,781	38,848
Other South America	105,071	10,691	132,597	11,855	624,538	75,604	801,738	78,846
China	306,274	37,970	81,830	16,773	1,005,897	105,593	583,379	116,331
Philippine Islands	69,380	6,616	131,647	13,085	778,504	70,199	929,001	90,081
Australia	22,127	2,275	68,845	6,425	352,336	39,818	340,656	38,249
Other countries	139,653	18,122	128,009	15,823	1,167,659	146,855	1,090,773	134,689
Cover paper ....lbs.	69,184	10,086	88,284	19,986	512,373	$82,306	790,011	$152,961
Greaseproof paper and waterproof paper....lbs.	183,288	17,274	210,373	25,228	1,186,324	134,002	1,314,103	164,178
Wrapping paper— Kraft paper ....lbs.	27,574	3,208	40,595	3,624	394,206	45,815	458,474	38,947
Other wrapping ....lbs.	2,134,437	153,257	2,177,440	162,009	15,817,987	1,309,823	18,725,450	1,428,276
Surface-coated paper ....lbs.	383,812	43,669	159,305	36,144	2,257,929	349,077	2,464,419	367,195
Tissue and crepe paper ....lbs.	344,670	86,401	280,949	77,355	1,895,378	483,860	2,259,566	600,970
Toilet paper ....lbs.	285,569	34,277	356,090	43,158	2,805,461	326,296	3,383,725	402,695
Paper towels and napkins....lbs.	178,381	27,350	200,626	30,745	973,613	150,797	969,065	151,705
Box board ....lbs.	.....	.....	1,785,563	74,968	.....	.....	10,491,251	388,652
Bristols and bristol board ....lbs.	39,857	6,612	74,687	9,326	653,701	83,843	572,214	71,463
Other paper board and strawboard....lbs.	7,774,781	276,548	2,659,930	141,560	51,362,352	2,049,509	21,559,742	1,044,345
Sheathing and building paper ....lbs.	747,856	30,674	1,038,462	46,771	3,297,392	153,192	8,675,693	390,149
Wall board of paper or pulp....sq. ft.	1,577,204	59,357	619,350	22,514	12,130,107	406,168	8,466,037	285,234
Blotting paper ....lbs.	249,486	29,904	252,132	31,881	1,606,526	200,073	1,950,097	235,121
Filing folders, index cards, and other office forms ....lbs.	33,208	11,708	58,395	20,752	302,991	110,336	422,958	137,977
Papeteries (fancy writing paper) ....lbs.	74,189	25,415	66,124	20,519	246,970	93,654	305,810	102,921
Other writing paper ....lbs.	411,135	58,437	384,064	80,385	3,195,572	498,871	2,145,349	399,191
Cigarette paper and books....lbs.	42,554	11,857	38,407	12,645	653,893	234,667	320,318	93,648
Photographic paper ....lbs.	173,077	178,193	156,229	122,516	1,099,849	1,149,866	1,145,927	974,032
Paper hangings (wall paper)....yds.	1,016,695	29,606	749,384	19,493	16,902,973	442,107	17,297,100	431,107
Paper bags ....lbs.	868,268	75,842	1,116,441	86,527	6,841,751	656,197	8,528,497	727,193
Boxes and cartons ....lbs.	1,103,652	94,339	1,597,122	136,979	8,818,498	731,965	10,792,743	835,937
Carbon paper ....lbs.	85,180	68,007	76,965	60,466	604,424	473,611	694,145	570,753
Envelopes ....lbs.	231,349	43,339	205,655	41,201	1,597,262	320,967	1,700,023	324,390
Cash-register and adding-machine paper....lbs.	71,026	8,422	168,191	16,349	765,602	87,366	1,069,431	110,925
Other paper and paper products....lbs.	3,633,473	388,494	1,396,351	316,171	25,063,555	2,864,469	14,472,899	2,772,033
Books, maps, pictures, and other printed matter (total)	.....	1,953,531	.....	1,746,093	.....	13,048,574	.....	13,886,324
Books and pamphlets ....lbs.	3,151,112	918,557	3,571,586	887,387	21,504,668	6,310,089	27,490,262	6,828,888
Maps and charts ....lbs.	7,529	7,253	15,648	11,873	102,114	104,142	133,009	138,943
Music in books or sheets ....lbs.	89,182	52,098	58,095	33,187	429,639	257,598	323,612	198,968
Souvenir post cards ....lbs.	53,599	29,334	41,536	28,453	248,464	120,351	313,537	143,954
Lithographically printed matter, except post cards and maps ....lbs.	255,304	226,586	434,652	221,575	1,466,024	1,256,160	2,149,346	1,286,508
Playing cards ....Packs	514,171	52,630	882,985	88,829	4,168,035	468,773	5,392,303	566,871
Other printed matter ....lbs.	1,865,196	667,073	1,400,898	474,789	11,925,364	4,531,461	13,071,017	4,722,192
WOOD PULP AND PAPER STOCK								
Sulphite wood pulp ....tons	1,782	105,543	1,906	113,167	12,889	771,372	15,206	874,231
Soda wood pulp ....tons	.....	.....	200	18,197	1,082	100,951	1,668	154,846
Other wood pulp ....tons	425	26,920	609	128,956	3,095	290,059	5,903	701,405
Rags, and other paper stock ....lbs.	11,914,432	189,977	12,242,258	216,339	86,296,665	1,442,330	120,686,025	2,026,077
PAPER AND PULP MILL MACHINERY								
Paper and pulp mill machinery....lbs.	1,011,278	162,133	563,275	112,008	7,482,992	1,542,225	3,444,762	936,418

Quenching Water Drained From Ash Hoppers Causes Corrosion

In connection with corrosion of ash hoppers, an interesting test has recently been made by the Pittsburgh Testing Laboratories Co. Samples of water discharged from ash hoppers of four large power plants were taken and their corrosive action on cast iron, copper steel alloy (.26 to .28 per cent copper) and tank plate, measured by immersing plates of these metals in them repeatedly and measuring the unit weight loss for pieces of like thickness and area. The water was heated to the temperature at which it originally left the hoppers. The following table gives the unit weight losses:

	Water Number			
	1	2	3	4
Cast iron	3.31	2.79	2.19	2.07
Copper steel alloy (.26 to .28 per cent copper)	4.47	7.25	5.98	5.95
Tank plate	3.93	6.69	5.94	5.28

These results indicate that, on an average, cast iron will withstand this corrosion about twice as long as ordinary tank plate and about 2½ times as long as copper steel alloy.

Clipped from POWER PLANT ENGINEERING Sept. 1, Page 887-8

Corrosability Averages

Cast Iron 2.59
Copper Steel 5.91
Tank Plate 5.46

PROOF that Cast Iron is Best for Ash Handling Equipment

A-S-H Hoppers, Gates, Bunkers, Tanks and Sluiceways are made essentially of CAST IRON.

No substitution of cheaper but less efficient material.

The ALLEN-SHERMAN-HOFF Co.

263 SOUTH 15th STREET - PHILADELPHIA

Chicago New York Boston Rochester Detroit Pittsburgh Kansas City, Mo. St. Louis Wilkes-Barre, Pa. Atlanta Indianapolis Cincinnati Minneapolis

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FOREST PRODUCTS LABORATORY SHOULD HAVE LARGER APPROPRIATION

The National Forestry Program Committee through its chairman Mr. R. S. Kellogg of New York has presented to the Director of the Budget, General Herbert M. Lord, a vigorous statement in behalf of more adequate federal forestry appropriations for the fiscal year 1926-1927, including an item of $332,000, for forest products investigations, which is an increase of $206,000 over the $126,000 now available for this work.

This statement in part says: "At a meeting of national character held in Washington last November the President reviewed the entire forestry situation in the United States in masterly fashion and laid especial stress upon the great need for a reduction in forest waste. This is a public problem far exceeding the interest of any individual operator in the woods. Consumers are concerned as much as producers. Solution is possible only through prolonged and consistent technical research into the properties, treatment and uses of many species and a wide variety of forest products. The work is of such character that most of it can be successfully carried out nowhere except at the Forest Products Laboratory, Madison, Wis. We are not overstating the situation therefore when we say that it is nothing but empty talk to hold meetings and discuss the importance of reducing forest waste unless this is followed by sufficient appropriations to make possible the studies without which forest waste cannot be checked. The amount which we ask for this purpose is exceedingly modest, and we are prepared to supply detailed specifications and reasons for every item that goes into this total of $332,000. It ties in directly and practically with the conservation and standardization programs of the Department of Agriculture and the Department of Commerce which have had such widespread public approval.

"There is no 'hot air' in this statement nor does it contain a single inflated figure on the supposition that it will be cut down and that we will be satisfied with a less amount than the one asked. We know the condition and what is needed therefor. We know also that less expenditures for these items than the small amounts asked for must inevitably result in greater expenditures later or in losses which cannot be compensated for. No solvent business man neglects to protect his resources or fails to insure his assets against hazards. The Federal Government is entrusted with leadership in the management of one of the greatest assets in America. Representing those who very largely pay the bills for such management, we respectfully but nevertheless firmly request that the full amount specified for each of those items be included in the Federal Budget for 1926-27."

In the hearing before the Director of the Budget the committee emphasized its support of the budget principle in government and that as citizens and taxpayers, it favored economy and tax reduction. He urged, however, the necessity of differentiating between true national economy and the so-called economy which makes a small present saving at the expense of large future losses.

The Budget will soon be completed. Papermen throughout the country cannot fail to be in accord with the program of increasing the families of the Forest Products Laboratory and the PAPER TRADE JOURNAL urges them to write immediately to the Director of the Budget and to their Senators and Congressmen impressing on them the need for the increase asked for by the National Forestry Program Committee.

GOOD WORK BY IMPORT COMMITTEE

That the Import Committee of the American Paper Industry has fully justified the need for its existence is shown in a striking record of achievements during the past year in checking the unfair importations of foreign paper just issued by Mr. Warren B. Bullock, manager of the committee.

The report shows that during the fiscal year just closed the Import Committee took up 161 separate types of violations of the customs laws, some of these cases involving a single principle including as many as forty separate importations.

Many of these cases are now before the custom courts, while final decisions have been reached in others which have been of the greatest importance to the domestic industry.

The work of the Import Committee in the annual report is classified by groups, and includes the following cases in which a successful conclusion has been reached:

News Print—Definition of Standard News Print promulgated by Treasury Department, so phrased as to eliminate poster, news liner, catalogue, half tone, hanging and similar special papers from duty free provisions of the Tariff Act. Railroad writing offered free of duty as standard news print held dutiable as writing paper. Railroad writing in rolls, offered free of duty as standard news print held dutiable as printing paper. Poster papers offered free of duty as standard news print held dutiable as printing. Half tone news offered free of duty as standard news print held dutiable as printing paper. Product of Swedish news print mill embargoed until it consented to allow American government agents to see its books for custom purposes. Paper offered free of duty as standard news print held dutiable as hanging paper.

Book Papers—Treasury Department rules certain light weight papers offered as printing be classified as bible. Paper offered free of duty as standard news print held dutiable and classified as colored book. Box liner containing cotton, offered free of duty as standard newsprint held dutiable as printing. Super book paper

reappraised and given higher valuation. Collotype paper offered as printing, held to be special paper, dutiable at higher rate. Heavy offset paper offered as board, found to be dutiable as printing paper.

Wrapping Paper—German sulphite wrapping and bag paper ruled to be dumped and subject to anti-dumping as well as regular high duties. Kraft wrapping paper found by Customs Court to be undervalued. Kraft from one Canadian mill found to be undervalued, and all ports instructed to hold further shipments for investigation under anti-dumping act. Swedish kraft mill's product embargoed until it allowed government agents to see its books for determination of true export prices. Treasury Department rules against importers who try to enter wrapping paper as board with one-third of wrapping paper duty.

Writing and Fine Papers—All so-called canary news, railroad manilas and railroad writing papers when in sheets found to be writing paper, not standard news print duty free. Paper offered as printing, classified as manifold. Special finish drawing paper held dutiable under higher classification. Valuation advanced on onion skin paper. Higher valuation placed on wedding bristol. Embossed cover and body stock of writing paper grade held for higher duty under special provisions for embossed papers.

Boards—Treasury Department orders vulcanized fibre classified under special provision, not to be admitted as board. Saturating felt from Czecho-Slovakia held for countervailing duty. Valuation increased on Austrian pulp board. Countervailing duty applied to Canadian roofing felt.

Specialty Papers—Proper marking ordered of Vegetable Parchment with country of origin. Duty raised on vegetable parchment scrap. Foreign imitation parchment paper denied further admission as wrapping paper, and held for 3 cents and 15% ad valorem duty, instead of 30 per cent as for wrapping. Dumping of half-fine gold paper not found, but valuation raised. Classification raised on metal coated glassine papers. Valuation increased on bowl papers. Valuation raised on baryta coated papers.

The Committee came formally into existence October 1, 1924, with Warren B. Bullock as Manager, and Henry A. Wise, as General Counsel, and later engaged John R. Hecht, formerly of the Customs Service, as Customs Expert. The Committee itself is composed of representatives of the various groups of the industry, and has laid down its policy as being the enforcement of existing customs law on paper.

I. P. Co. Makes Improvements at Glens Falls

[FROM OUR REGULAR CORRESPONDENT]

GLEN FALLS, N. Y., October 12, 1925.—The Glen Falls Mill of the International Paper Company is undergoing a complete overhauling and a number of improvements are being made. Unconfirmed reports in this city are to the effect that when alterations and repairs are completed a change in the product of the mill will be made. At least one of the two large paper machines, which heretofore have operated on newsprint, will be used for the production of paper of a much higher grade than newsprint, according to the local report.

The I. P. Co. is at present building a new roof on the pulp mill and it is said that at least one new grinder has been installed. Considerable new equipment is also being installed in the paper mill proper. The pulp mill has been grinding considerable wood of late and large quantities of pulp wood are being received almost daily which is taken here to indicate that it is the plan of the company to operate the mill on full time in the near future.

Box Board Production for August

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 14, 1925.—The Department of Commerce announces August figures on the operations of boxboard manufacturers, based on reports of 89 firms operating 111 plants. The capacity data in the following table vary according to the normal number of working days in each month, Sundays and holidays being excluded until the end of May, 1924, and Saturdays also being excluded since June 1, 1924, when the five-day week was adopted by about 80 per cent of the mills.

Year and Month 1924	Operation: Inch hours Capacity	Operation: Inch hours Operated	Operation: Per cent of capacity	Production: Tons Capacity	Production: Tons Output	Production: Per cent of capacity	Unfilled orders (end of month): Orders received Tons	Unfilled orders (end of month): Tons
January	9,855,612	8,542,957	86.7	229,814	181,953	79.2	198,156	111,825
February	9,476,550	8,290,289	87.5	220,975	179,854	81.4	167,855	103,643
March	9,855,612	9,194,400	93.3	229,814	200,411	87.2	195,635	97,181
April	9,855,612	8,574,444	87.0	229,814	182,817	79.5	158,980	73,629
May	9,855,612	8,253,431	83.7	229,814	173,483	75.5	165,868	68,676
June	7,960,302	6,693,458	84.1	185,619	151,414	81.6	167,658	85,414
July	8,360,484	7,174,718	85.8	197,186	164,762	83.6	186,259	105,009
August	7,960,302	7,973,129	100.2	185,619	183,570	98.9	202,919	122,927
Total (8 mos.) 1925	73,180,086	64,696,826	88.4	1,708,655	1,418,264	83.0	1,443,330	——
January	7,960,302	8,388,897	105.4	185,619	199,633	107.5	199,649	112,911
February	7,600,440	7,550,968	99.3	177,320	177,292	100.5	*162,724	*100,403
March	8,360,484	7,569,995	90.5	197,186	179,067	91.0	*169,924	*90,062
April	8,360,484	*7,654,378	91.6	197,186	*185,866	94.3	*169,914	*79,127
May	7,980,462	7,111,776	89.1	188,223	163,956	87.1	*175,246	*83,415
June	8,360,484	7,983,150	95.5	197,186	190,310	96.5	*193,564	*92,022
July	8,740,506	8,272,036	94.6	206,149	196,522	95.3	*216,013	111,919
August	7,980,462	8,012,001	100.4	188,223	195,527	103.9	210,385	119,248
Total (8 mos.)	65,343,624	62,543,201	95.7	1,537,092	1,488,173	96.8	1,497,419	——

Year and month 1924	Shipments of boxboard Tons	Stocks of boxboard end of month Tons	Consumption of waste paper Tons Capacity	Consumption of waste paper Tons Consumed	Consumption of waste paper Per cent of capacity	Stocks of Waste Paper (end of month) Tons On hand	In transit	Unshipped purchases
January	179,947	46,696	217,828	170,291	78.2	132,010	14,324	40,891
February	176,037	50,513	209,450	169,644	81.0	127,259	14,353	27,100
March	202,097	48,827	217,828	186,463	85.6	144,118	15,417	24,480
April	182,532	49,112	217,828	169,573	77.8	143,601	11,918	27,631
May	170,821	51,774	217,828	165,479	76.0	142,319	11,632	26,854
June	150,920	52,268	175,938	148,440	84.4	159,767	13,674	34,022
July	166,664	50,366	184,778	158,734	85.9	165,802	16,939	34,870
August	184,941	48,935	175,938	181,752	103.3	161,793	17,002	34,919
Total (8 mos.) 1925	1,413,959	——	1,617,416	1,350,376	83.5	——	——	——
January	195,501	52,466	175,938	193,285	109.9	172,382	18,846	34,974
February	*176,101	*53,960	167,910	170,023	101.3	172,456	16,635	27,110
March	*180,418	51,835	184,778	170,363	92.2	176,035	13,199	22,948
April	*179,772	57,212	184,778	170,487	92.3	172,223	14,307	32,590
May	*168,353	*53,327	176,379	159,095	90.2	174,726	12,686	26,129
June	*184,928	*59,452	184,778	*179,953	97.0	166,467	13,872	25,246
July	190,667	64,600	193,177	184,295	95.4	160,099	11,953	34,358
August	203,766	55,560	176,379	187,301	106.2	149,984	14,598	29,761
Total (8 mos.)	1,479,506	——	1,444,117	1,414,802	98.0	——	——	——

*Revised.

Marquette Paper Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, October 13, 1925.—The Marquette Paper Company has been incorporated under the laws of the State of Illinois with headquarters in the Transportation Building, 608 South Dearborn street, Suite 716-718.

The company is handling the following papers: Clear Title Bond, Investmore Bond, Brookline Bond, Bankable Bond, Postwell Ledger, Boulevard Bond, Printers' Bond and Marquette's Perfect Index.

The company is also agent for Success Bond, Conference Bond, Glazier Bond and Putnam Ledger manufactured by the Neenah Paper Company, of Neenah, Wis.

Now Tonawanda Paper Co.

NORTH TONAWANDA, N. Y., October 10, 1925.—The name of the Daily News Paper Corporation has been changed to the Tonawanda Paper Company, Inc., the change taking effect September 1.

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J. L. FEARING, Sales Manager
R. C. TILDEN, Assistant Sales Manager

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

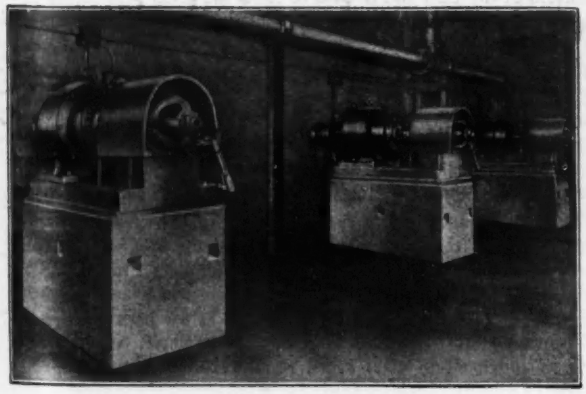
Speed Reducers

Their Advantages and Applications in the Paper Industry*

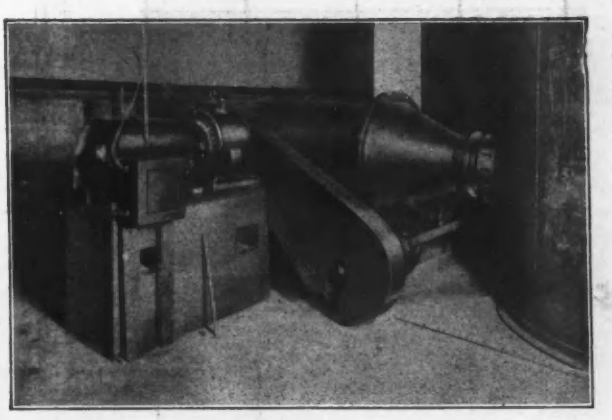
By J. R. Shays, Jr., New York Representative of Foote Bros. Gear & Machine Co.

It is a surprising fact that although speed reducers have been used very extensively in other industries for nearly twenty-five years, it is only in recent years that their worth has been recognized in the paper industry. It is still more surprising, that in spite of the widespread dissemination of information on the subject of speed reducers, especially during the past five years, due to the combined advertising and sales efforts of a greater number of manufacturers of these machines, that they are not more widely known in the paper industry.

A natural question in your mind at this point, probably is: "What is a speed reducer?" In reply I would describe a speed reducer as a mechanical device for the reduction of speeds. Speed reducers most commonly known could be better described as a set of two or more gears with their necessary shafts and bearings encased in a cast iron housing, and used for the purpose of stepping down the speed of the driving unit to the required speed of the driven unit. The term was probably first used by Foote Bros. Gear & Machine Company and applied to our spur and worm gear types of speed reducers and has been used for so long that with the later advent of other manufacturers of speed reducers it is now necessary to classify the reducer as to particular type of transmission equipment. There are now on the market seven different types enumerated as follows and in the probable order of advent into the industrial market: Worm gear, non-planetary, spur gear, planetary spur gear, herringbone gear, straight spur gear and hydraulic, with one or more manufacturers making each type.



Battery of Four Receivers on Sulphite Chest
Installed at West Linn Mill of Crown, Willamette Paper Co.



Rotary Sulphur Burner
Installed at West Linn Mill of Crown, Willamette Paper Co.

Used for Many Years

Worm gear speed reducers have been known and used for many years, their biggest field in the past being their use in connection with freight and passenger elevators. Lack of efficiency in worm gears in the past has been a handicap and retarded their wider application and use, but refinement in tooth design and construction has greatly increased their efficiency so that during the last ten years a much wider field of application has developed and the results obtained have been highly satisfactory to the users.

The Planetary and non-Planetary type of spur gear reducers have been manufactured for nearly twenty-five years, Foote Bros. Gear and Machine Company being the pioneers and only firm manufacturing the non-Planetary type which is covered by their basic patents.

The straight spur and herringbone type are more recent developments and the Hydraulic type, the latest being a radical de-

* Presented at the meeting of the Technical Association of the Pulp and Paper Industry, at the Chemical Exposition, New York, Sept. 30, 1925.

parture from accepted standards of design probably might be considered still in the nature of an experiment.

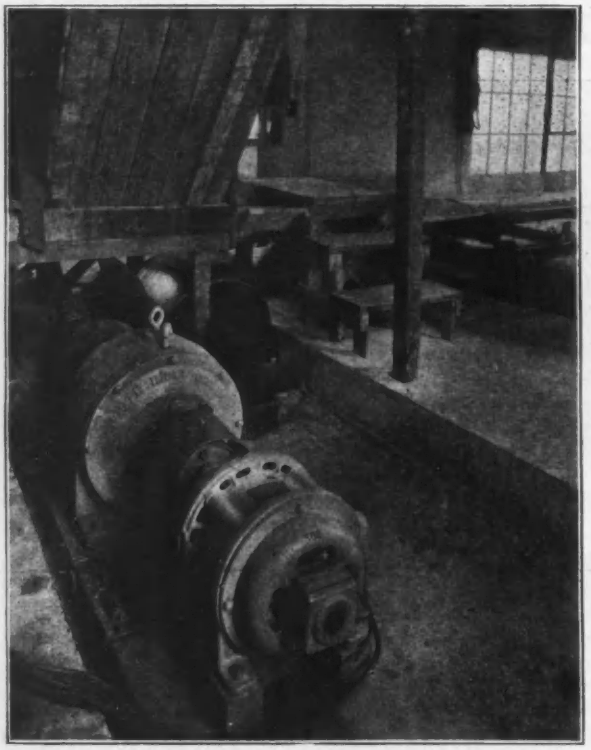
It is not my intention to go into the details of the construction of the various reducers as this would involve a lengthy description and is not absolutely pertinent to the subject at hand.

It can be seen, however, that there is a wide range of types to select from and with proper investigation the right machine can be selected which will be best suited to meet a given set of conditions.

Reasons for Limited Use in Past

In the paper industry in the past and in many plants at present various drives have been and are being used, such as belts, open gear trains, rope drives, silent chains, etc. Probably one of the primary reasons why speed reducers have not been more generally used in the past, is the fact that the older mills have been using either steam or water power, resulting in a lower driving speed on all prime movers as compared to the higher speeds of the electric motor. The advent of electricity in any mill will open up a much wider use of the speed reducer and it will be found that what on the surface appears to be a difficult problem in speed reduction can be very easily accomplished by means of some standard make of speed reducer.

Some of the advantages in the use of speed reducers over above methods are: The saving of space effected, the elimination of inefficient line and counter shafting and the more steady progress of the work due to the positive drive, elimination of accident hazards, because there are no exposed moving parts and considerable saving in operating costs. As an example a pulp agitator operating at a speed of 10 revolutions, driven from a line shaft



CHIPPER CONVEYOR

Installed at West Linn Mill of Crown, Willamette Paper Co.

operating at as low as 200 revolutions would require a double reduction belt drive, one reduction of 4:1 and another of 5:1 or an open gear drive for one or both reductions. This same agitator operated by electric motor of say, 900 revolutions by means of belts, would require at least three reductions, with the loss of space and efficiency resulting from such a drive. With a speed reducer, a motor of 1200 revolutions could be used and the entire equipment including motor would not occupy much more room than that taken up by one of the belt reductions and probably not as much. Another advantage is, that a speed reducer is a self-contained unit, self-lubricating. Totally enclosed it is accident proof and with all parts running in a constant bath of oil, it is

SULPHITE WET MACHINES OR DECKERS

Installed at West Linn Mill of Crown, Willamette Paper Co.

operating under the most favorable conditions. A properly designed and constructed reducer should operate for from ten to fifteen years with nominal expense for maintenance.

Possibilities of Economy

It is a well-known fact that the starting load on a pulp agitator is far in excess of the running load and that a chest that would require from 5 h.p. to 7½ h.p. for normal operating load would require from 15 h.p. to 20 h.p. for starting. By the use of speed reducer, agitators and pumps can be conveniently arranged so that by extending the high speed shaft of the reducer a silent chain drive pinion could be mounted on same and the pumps be operated by the surplus energy that would not be required for the agitator after it once was started. This particular problem was worked out by the writer in co-operation with one of the leading paper mill engineers of the East and is cited to show the great possibilities of economy in both space as well as power when speed reducers are used.

The use of speed reducer does away with the necessity of using special low speed motors which are costly and take longer to obtain from the manufacturers than the higher speed types. The higher speed motors with smaller frames, take up less space and are of lighter weight, making for ease of erection, especially where the drive equipment is mounted near the ceiling or on structural work.

The primary function of a speed reducer being the conversion of speed generally from a high speed electric motor to a slow driven speed, necessarily must be designed to overcome heavy torque loads on the slow speed shaft. That reducer which accomplishes this with the least amount of effort applied at the high speed end will prove the most efficient. It would, for example, be a serious error of judgment to place speed reducers in the same class as electric motors and make a selection based entirely upon the cost of the machine. There is a wide difference in the qualities and design of reducers all of which affect their life and service ability and in making your selection it will be well to make a careful study of the design and principles involved in the construction of any particular type you may have in mind to use, always bearing in mind the fact that at low driven speeds, torque loads must be considered and the resultant tooth pressure loads will be determined by the pitch radius or lever arm of the low speed gears. In other words the reducers that employ low speed gears of greatest permissible diameters will have a lower tooth pressure than those

using smaller diameter gears and the result will be greater efficiency and reliability.

A Destructive Force

Noise is a result of excessive vibration and vibration is a destructive force. Therefore, in the selection of speed reducers, that machine which operates with the minimum amount of vibration will prove to be the one that will give the longest service, as freedom from vibration indicates accuracy of workmanship and design.

During recent years the Paper Industry has been utilizing to a limited extent speed reducers on some of their equipment. Our firm have furnished both our worm and spur gear type reducers for driving, log and pulp wood conveyors, power plant conveyors, conunuous magazine pulp grinders, pulp agitators, Sulphite Wet Machines or Deckers and Pumps and sulphur burners, Filters, Grinders. Some reducers have been applied to paper machines. This does not fully cover other possible applications as of course there are various kinds of agitators used, calenders, pump heaters, Jordan Engines and other equipment more familiar to paper mill engineers than to myself.

On Lookout for New Applications

Close co-operation between the mill engineers and the sales engineers of the reducer manufacturers will result in a greater use of speed reducers in this industry and be of mutual benefit. The manufacturers are ever on the lookout for new applications for their machines and are quick to develop new types to meet new conditions. Our firm has produced four or five new and distinct types of reducers during the past two years to meet conditions in various industries, those machines being so standardized that most of the parts are interchangeable with those of our other standard types in the same general machine. Our new Vertical type worm gear reducer, Double Reduction worm gear reducer for reductions as high as 10,000 or 15,000 to 1 and our new right angle drive spur gear speed reducer are some of our recent developments, the latter machine giving the advantage of the right angle drive as with a worm gear unit but with the high efficiency of a spur gear drive. These new machines have created considerable interest in the various industries.

Possibilities in Paper Industry

What speed reducer manufacturers have been able to do for the other industries, they certainly can do for the Paper Industry. The fact that speed reducers have been so successfully applied in so widely divergent industries as the cement, steel, glass, mining, chemical, dairy, etc. would indicate that in the Paper Industry there are many machines whose output or convenience of operation or location would be materially improved by the use of speed reducers. This may mean pioneering on the part of the industry, as in some particular instances reducers may never have been used for a particular application, but the fact that it has been used in some other industry for driving somewhat similar equipment, would eliminate, to a certain extent the element of chance and the result obtained by the application, no doubt would be well worth the experiment.

A Personal Experience

If the paper mill engineers will be open to an interchange of ideas and information with the sales engineers from the manufacturers, on new applications and discuss with them ways and means of driving their various equipment, the industry at large will be benefited. I make this statement advisedly, as a result of a personal experience I had only this year. An engineer with a large industrial firm in the East had a problem confronting them in speed reduction. This man, a very good friend of mine and familiar with our equipment, having used quite a number of various types. I dropped in one day and asked if we could be of service to his firm in any way. I was informed that they were working on a special drive for one of their plants but they did not think that we had anything that would help them out. I looked over his plans, noting horse power and speed conditions and at a glance knew that we did have a standard machine that would do exactly what they wanted to accomplish. My friend was astonished and advised me that as far as they had gone with their preliminary plans and research work the cost was nearly $1,000.00 and they had estimated that the completed equipment would cost them another $2,000.00 to build. Our reducer standard in every respect and readily adaptable to their problem could be furnished at a cost of approximately $500.00. Our machine was ordered and the drawings revised to suit. We saved them actual money and could have saved them more had they consulted with us when the problem first came up. It stands to reason that any firm specializing in equipment of this kind has met and overcome many difficult problems and by co-operating with the manufacturers instead of trying to work out of your own difficulties, both the manufacturer and mill engineer will be the gainer. A problem may appear difficult to you, but with our diversified experience nine times out of ten it will prove simple to us.

The above is a definite instance of a lack of co-operation and is typical of what might as well occur in any plant, and I trust that the relating of this incident may prove the means of effecting a substantial saving to some of the firms represented here.

In closing I maintain that the advantages of speed reducers in the paper industry will soon become more widely recognized and their use to the benefit of the industry will become more universal. This will be accomplished more through closer co-operation of paper mill engineers and reducer manufacturers, than by any other means of introduction we, as manufacturers, may employ.

Lectures at the Power Show

All of the first two floors of the Grand Central Palace and ninety per cent of the space on the third floor has been contracted for by exhibitors at the Fourth National Exposition of Power & Mechanical Engineering to be held from November 30 through December 5, 1925. This is ample evidence that the coming Power Show will present more than its usual quota of the newest devices and apparatus that obsolete rapidly the power plant of today.

One of the features of the Show will be a series of lectures on the important developments in power and mechanical equipment during the preceding year. These are planned primarily for students but will be of general interest to mechanical engineers who wish to bring up to date their information on the rapid development in all phases of mechanical engineering. The list of topics which have been selected for presentation by leading authorities includes: Steam Prime Movers, Oil and Gas Engines, Steam Boilers, Modern Industrial Power Plants, Hydraulic Machinery, Machine Tools, Heating and Ventilating Equipment, Mechanical Refrigeration, Mechanical Power Transmission, Standardization, Materials Handling in the Power Plant, Materials Handling in Industry, the Steam Locomotive.

The lectures will be scheduled to avoid conflict with the sessions of the Annual Meetings of The American Society of Mechanical Engineers and the American Society of Refrigerating Engineers which will be held in New York during the week of the Power Show.

As most of the lectures deal with subjects that will be well represented by exhibits at the Power Show, the combination of lectures and exhibits will furnish a valuable opportunity for securing available information on the important types of mechanical equipment. The Power Show has great educational value and the plan of lectures with the opportunities to study several concrete examples of the apparatus dealt with in each lecture provides means for making this educational value available to those who use the Power Show for that purpose.

The lectures will be further supplemented by a series of attractive motion picture records of engineering achievement.

The Managers of the Power Show are Fred W. Payne and Charles F. Roth, with offices in the Grand Central Palace, New York.

Soluble Sulphites and Their Bisulphites In the Pulping of Wood

A Review of the Literature

JOHN D. RUE[1]

The writer has had occasion recently to review the literature relating to the use, in connection with the pulping of wood, of sulphites and bisulphites other than those of lime. While no claim is made that the search was an exhaustive one, the information collected may be of interest and value to others working in the same field.

The first patent involving the use of H_2SO_3 in pulping wood was U. S. Pat. 70,487, Nov. 5, 1867, issued to B. C. Tilghman. This, together with a subsequent patent, No. 92,229, forms the basis of all the various modifications of the sulphite process in operation at the present time. Tilghman pointed out that H_2SO_3 in water at the requisite temperature appears to be the efficient agent in dissolving the intercellular or cementing matter of the vegetable fibrous substance, and where the color of the product is of no consequence the operation may be performed with H_2SO_3 alone. The presence of a sulphite in the acid solution prevents the reddening effect, and in the case of many fibrous substances a considerable bleaching action takes place.

R. P. Pictet (D. R. P. 26,331, about 1884, and Brit. Pat. 9,509, 1884, and Brit. Pat. 5269, April, 1887) renewed the idea of using H_2SO_3 alone. Rather concentrated solutions (100 to 150 grams of SO_2 per liter), together with low temperatures (80° to 90° C.) and pressures of 5 to 6 atmospheres, were used.

While Tilghman claimed the use of sulphite in general, and soluble sulphites were technically applied by Eaton in 1871 and by Ekman ($MgSO_3$) in 1874 (Schwalbe, Chemi der Cellulose p. 425) calcium sulphite was, for economic reasons, the one most commonly used. The insolubility of mono-calcium sulphite, which separates out as a yellowish solid when an insufficient amount of H_2SO_3 is present, and of $CaSO_4$, which is found under certain conditions of liquor making and of cooking, has led to efforts to replace the lime by some base whose mono-sulphites as well as its bi-sulphites and sulphates are soluble. The use of a base whose mono-sulphite is soluble would eliminate separation of insoluble sulphites and sulphates from the liquor on the walls of the equipment and on the fibers and would at the same time permit a higher concentration of the bi-sulphites, thus avoiding the danger of exhaustion of the base during cooking. Furthermore, the mono-sulphites could be forced into the chips and the requisite amount of SO_2 admitted at will.

Magnesium Compounds

The end sought has been partially attained in localities favored with dolomite or magnesite by the use of a solution containing magnesium sulphite or both calcium and magnesium sulphites (J. A. DeCew, Paper Trade Jour. Mar. 24, 1910, p. 54). The greater solubility of the magnesium sulphite and sulphate as compared with the lime salts helps to overcome the disadvantages inherent in the use of the latter. Where dolomite is not available the source of magnesium must be found in $MgCl_2$ or $MgSO_4$. These salts are abundant, particularly in Germany. C. G. Schwalbe and K. Berndt (*Papierfabr.* 22 Festheft, 65-71, 1924) have reviewed the various processes for making $Mg(HS_3)_2$ from the two compounds. J. L. Jardine (Brit. Pat. 2,509, Feb. 17, 1915; French Pat. 480,933, Oct. 10, 1916) has proposed a method of making $Mg(HSO_3)_2$ in which the absorption liquor is kept hot while SO_2 is introduced.

For the pulping of straw, some attempt has been made to use calcium and magnesium mono-sulphite without the addition of H_2SO_3. The feasibility of the idea was demonstrated (A. S. M. Klein, *Paper* Vol. 35, 511, 1925) many years ago at Arad (Hungary), Codigoro (Italy), and Golzern (Saxony). The process was patented by Nemethy in Austria, Italy, and other countries. The idea was revived by Drewsen (U. S. Pat. 1,511,664, Oct. 14, 1924), who cooks cereal straw under pressure in a strong aqueous solution of $MgSO_3$, after which the treating liquor is removed and the pulp is suspended in water and repeatedly treated with hot SO_2 in order to produce a strong bleachable fiber.

In U. S. Pat. 730,439, 1903, Drewsen proposes to impregnate wood chips with Na_2SO_3 or $MgSO_3$, after which the wood is to be cooked by the sulphite process. Such a procedure can be accomplished only by the use of a soluble mono-sulphite.

Lüders (D. R. P. 301,716, Aug., 1916) uses calcium and magnesium sulphite for pulping weakly lignified plants.

Ammonium Compounds

The use of $(NH_4)_2SO_3$ as a pulping agent has attracted the attention of several inventors. The fact that its two constituents NH_3 and SO_2 are both gaseous and that it readily decomposes into those constituents suggests interesting possibilities of application.

C. A. Braun Schubert, (*Dis Cellulosefabrikation*, Ill Oufl., p. 183; Dieckmann, *Sulfitzellstoff*, p. 213) describes a process in which wood chips are cooked in neutral $(NH_4)_2SO_3$ to a bright, completely defibered pulp of good yield, which is readily bleached. The cooking liquor is made by neutralizing a solution of H_2SO_3. The NH_3 can be recovered from the waste liquor by distillation with lime.

Improvements in Braun's process were proposed by D. Rosenblum, Leon Brech, and Edmund Tyborowsky (Brit. Pat. 5,552, Mar. 6, 1911; D. R. P. 257,544; U. S. Pat. 1,100,519, June 15, 1914; D. R. P. 252,321 (Kl. 55b), about 1911). According to their method NH_3 is added in excess to the neutral $(NH_4)_2SO_3$, which increases the pressure in the digester, the claim being that in this way a much lower cooking temperature can be used. The fibers are bright, strong, and easily bleached, and are obtained in relatively high yields. During the cooking with neutral $(NH_4)_2SO_3$ a part of the H_2SO_3 is liberated by the organic acids formed in the process and at the temperatures used, 160° to 170° C., acts vigorously on the cellulose. If, however, NH_3 is added in excess, an alkaline condition will be maintained throughout the cook and the attack on the cellulose prevented.

The liquor may be prepared by the addition of NH_3 to $Ca(HSO_3)_2$, which separates the calcium as insoluble $CaSO_3$. The cooking liquor for green pine wood contains 3 to 3½ per cent H_2SO_3 and 1¾ to 2 per cent NH_3. It is strongly alkaline and contains about 1 per cent free NH_3. The digestion is carried on for 10 hours at 165° C. and at a pressure of 10 to 12 atmospheres. The yield is reported as 65 per cent. Provision is made to recover the NH_3 and the SO_2.

Another modification of Braun's process was suggested by C. F. Sammet and J. L. Merrill (U. S. Pat. 1,016,178, Jan. 30, 1912). The digestion in their process is performed by means of SO_2, NH_3 and steam, all in the gaseous form.

The manufacture of a high-grade pulp is proposed by T. Maru-

[1]In charge, Section of Pulp and Paper, U. S. Forest Products Laboratory, Madison, Wisconsin.

zawa (Jap. Pat. 31,941, Dec. 24, 1917, C. A. 12, p. 2249, 1918; U. S. Pat. 1,244,525), using NH_4HSO_4 and H_2SO_3 or $(NH_4)_2SO_3$.

C. Harnist (Brit. Pat. 156,777, Jan. 7, 1921) uses NH_3 or other soluble alkali or alkali carbonate and SO_2 in succession or alternately. The material is given a preliminary steaming either with or without the addition of alkali or an organic solvent to remove rosin, etc. The NH_3 and SO_2 are introduced in gaseous form under pressure.

Sodium Compounds

The sodium sulphites and sulphates, being more soluble even than the corresponding magnesium compounds, possess the advantages of the latter in a still higher degree. Despite the greater cost of the sodium compounds, therefore, numerous references are found in the patent literature to their application in the pulping of wood.

C. Keller (*Papier Gtg.* No 7, p. 233, 1885) refers to the use of $NaHSO_3$ as early as 1871 or 1872, stating that it gave a somewhat hard product which could be rubbed in a mortar to a fiber noticeably white in color. The Tessie du Motay process was suggested as possibly applicable for the regeneration of the liquor.

J. A. Graham (Brit. Pat. 5,365, 1882) suggested modifying the sulphite process by introducing a solution of neutral sulphites (presumably Na_2SO_3) and then SO_2 in quantity less than required to form bisulphites.

The method of manufacturing the Na_2SO_3 or the $NaHSO_3$ was a matter of some importance, as was also the possible recovery of the soda base from the waste liquor. V. B. Drewsen and L. J. Dorenfeldt (Hofman, *Handbuch der Papierfabrication*, pp. 1510-1511) in an Austrian patent covered the preparation of $NaHSO_3$ by the addition of Na_2SO_4 to $Ca(HSO_3)_2$ solution. The precipitated $CaSO_4$ could, it was suggested, be used as a paper filler. According to Hofman, the process had not been fully demonstrated up to the time of writing (1895). Griffin and Little (*Chemistry of Paper Making*, p. 230, 1894) refer to the Crocker process as using $NaHSO_3$ prepared by agitating mono-sulphite of lime in a solution of neutral sulphate of sodium and then charging the mixture with SO_2.

C. Bache-Wiig (U. S. Pat. 1,240,970, Sept. 25, 1917) refers to the use of $NaHSO_3$ as well as of $Ca(HSO_3)_2$ and $Mg(HSO_3)_2$, but proposes particularly to use NaCl with them in order to retard the formation of hydro-cellulose and to enable low-temperature cooking.

C. G. Schwalbe (Brit. Pat. 19,142, 1910, D. R. P. 231,078) adds to a solution of neutral sulphite an acid, in the form of an aqueous solution or a gas, or an acid salt, the quantity employed being not more than that corresponding to half the equivalent of the quantity of sulphite used.

M. Müller and O. Heigis (Brit. Pat. 156,512, Jan. 5, 1921) use for cooking under pressure a weak alkaline solution or neutral lye containing 1 part of alkali acetate and 2 parts of alkali sulphite. The waste liquor may be acidified with H_2SO_3 or $NaHSO_4$, after which a mixture of H_2SO_3 and acetic acid can be boiled off. The residual liquor may then be evaporated and incinerated for Na_2CO_3 and this converted to a mixture of alkali acetate and sulphite for reuse in cooking.

C. A. Braun (D. R. P. 279,517, June 17, 1913) proposes to use mixtures of a readily soluble alkali sulphite with calcium or calcium and magnesium bisulphites.

As early as 1880 we find reference to the use of Na_2SO_3 in neutral form and without the addition of H_2SO_3. In Griffin and Little's *Chemistry of Paper Making*, p. 187, 1894, the case is stated as follows: "The difficulties occasioned by the use of an acid sulphite had, as early as 1880, led Cross to bring out a process employing an alkaline solution of sulphite of soda in iron digesters, unlined. This reagent has no effect on the iron, but its use necessitates the carrying of considerably higher pressures than when the bisulphite is used, the bleaching action of the sulphurous acid is much restricted, and the cost of chemicals much increased. There is, moreover, according to our own experiments, a precipitation under these conditions of free sulphur throughout the pulp."

Cross and Bevan (*Cellulose*, p. 209) list Cross's invention of 1880 in their classification of the chemical processes for disintegrating wood. They state that the hydrolyzing action of neutral sodium sulphite is feebler than that of the bisulphites and requires a higher temperature, viz, 160° to 180° C., adding that "in the presence of the ligno-cellulose complex, undergoing decomposition, the sulphite is dissociated, the base going to the acid group and the acid sulphite to aldehydic groups."

Little apparently was done with these suggestions during the remainder of the 19th century. In 1901 W. Schacht took out a German patent, D. R. P. 122,171, supplemented later by D. R. P. 131,118, covering the use of SO_2 in the preparation of a cooking liquor from recovered alkaline black liquor. (*See Papier stg.* 26 (84) 3143, 1901; *Jour. Soc. Chem. Ind.* 20 1230, 1901; *Wochenbl. f. Papier-fabr.* p. 2795, 1907). Schacht holds that in order to restrict cooking losses the liquor should be less alkaline than the usual alkaline liquor, or even neutral. By the use of Na_2SO_3 he claims an increase of 15 to 20 per cent in yield. The liquor is prepared by nearly saturating the crude recovered soda solution with SO_2 and then causticizing the residual carbonate. The liquor consists, therefore, of a mixture of Na_2SO_3, $Na_2S_2O_3$, and NaOH. NaOH is necessary to a certain extent in order to deal with the silicates and alumina of the raw material, and it should not exceed the proportion required for this purpose. Schacht stated in 1901 that the process was being tried on a large scale and was likely to be adopted by several factories shortly.

For the pulping of cornstalks, bagasse, or similar materials, V. Drewsen (U. S. Pat. 1,229,422, June 12, 1917) uses a solution of Na_2SO_3 in the absence of alkali of any substantial proportion. He boils 100 parts of the raw material with about 25 parts of Na_2SO_3 for 5 to 6 hours at 40° to 120° C. under conditions that maintain the liquor alkaline to litmus throughout the disintegrating process, and he continues the action until the connective is dissolved, loosened, or removed and there is left a soft, strong, fibrous material along with some pithy bodies.

C. A. Braun (D. R. P. 309,181, 1916) proposes the use of Na_2SO_3 together with Na_2S. He claims a "process for making semi-cellulose from highly lignified plants such as wood, etc., by cooking them under pressure with a liquor which, in addition to a weakly formed alkali such as Na_2CO_3 or alkaline soap according to the object sought, contains varying amounts of alkali sulphide and alkali sulphite or even of alkali sulphide and sulphite alone." In a supplementary patent (D. R. P. 309,236; U. S. Pat. 1,387,441, Aug. 9, 1921) he proposes the use of some NaOH in addition to the mixture of sulphide and sulphite. In a still more recent patent (D. R. P. 400,858, about 1923) he proposes to use a mixture of alkali silicates and sulphites, with or without the addition of caustic alkalies, alkali carbonates or mono-sulphides.

O. G. Stage (U. S. Pat. 1,279,604, about 1918) refers to liquor containing Na_2SO_4, NaOH, Na_2S, and Na_2CO_3.

Dimitry Chouchak (Fr. Pat. 515,501, Nov. 26, 1920; *Papier* 24, p. 213-214, 1921) recommends for pulping exparto the use of Na_2SO_3, $Na_2S_2O_3$, sulphonic acids, etc., as catalysts with cold NaOH after cold treatment with acids also containing the catalysts. The material is finally steamed at 140° C. He claims that the functions of the catalysts are to increase the rate of reaction and to prevent partial destruction of the cellulose.

For the pulping of wood or lignified plant fibers, and particularly cottonseed hulls, etc., C. G. Schwalbe (Sch. Pat. 61,331, Kl. 55b.1, 1921) recommends the use of neutral Na_2SO_3.

During the last 4 or 5 years the use of Na_2SO_3 both alone and in combination with NaOH has been given an added impetus through the efforts of L. Bradley and E. P. McKeefe. There is reproduced here in full a review (*Paper Trade Jour.*, Vol. 77, p. 51, Sept. 6, 1923) of a patent "recently issued" to them (apparently referring to Can. Pat. 219,557, June 13, 1922, issued also

as Brit. Pat. 105,434, U. S. 28, June, 1921, and D. R. P. 375,035, Kl. 55b.1, June 27, 1922):

"For the application of the process woods are divided into three classes: the hardwoods, softwoods carrying little resin, and softwoods containing much resin, and the process is modified in accordance with this classification.

"For hardwoods the cooking liquor used contains neutral sodium sulphite alone. For the second class, softwoods containing a small amount of resin, a moderate amount of caustic soda is used with the sodium sulphite, while for those for the third class where the wood contains much resin, a greater amount of caustic soda is used together with sodium sulphite. Caustic soda is recommended to be used after the wood has been subject to the action of the neutral sodium sulphite solution.

"By this process it is claimed that it is not only possible to pulp a mixture of woods of like character satisfactorily, but materially higher yields are obtained than is customary by other methods. Instead of from 38 to 45 per cent of pulp, based on the weight of the wood which is customary by other methods, by this process there is obtained from old poplar wood 61 per cent, new poplar 67 per cent, birch 60 per cent, and hemlock 50 per cent.

"While the sodium content of the residual liquors can be recovered for re-use it is possible to use the residual liquors over again with the addition of a further amount of sodium sulphite. It is stated that the same cooking liquor has been used for as many as five successive charges.

"It is indicated that where the two stage digestion is followed the first part of the cook is done with sodium sulphite liquor from a previous charge and the second stage with a sodium sulphite liquor containing caustic soda

"The quantity of sodium sulphite to be used in the case of hardwoods is from 35 to 45 per cent, based on the weight of the wood, in a concentration that may be as high as 200 grams per liter. The cooking is carried on at a pressure of from 110 to 140 pounds per square inch during a period extending from 4 to 6 hours. In the case of the second class of woods, where they contain a small amount of resin, a moderate amount of caustic soda is added to the liquor during the latter part of the cook. The third class of wood, such as Georgia pine, should be digested in two stages. For the first stage a liquor containing sodium sulphite, 35 to 40 per cent of the weight of the wood, is used and the cooking carried on for about 4 hours at approximately 120 pounds per square inch. The cooking liquor is then removed and for the second stage a liquor containing 20 to 25 per cent of sodium sulphite and 3 to 10 per cent of caustic soda, based on the weight of the wood, is used and the digestion is continued for about 4 hours at approximately 120 pounds per square inch. The liquor drained from the digester during the first part of the cook may be transferred to a fresh digester very easily.

"The advantages mentioned, besides higher yields of a superior quality of pulp, are the avoidance of objectionable odors as in the sulphite process, digester linings are not required as in the sulphite process, the superior bleachability of the pulp especially from southern pine, and that the process is generally applicable to all kinds of wood."

W. Schacht (*Wochenbl. f. Papierfabr.*, 54, 2851, 1923) in referring to a German translation (*in Zellstoff u. Papier*, No. 9, p. 221, 1923) of the above review claims priority over Bradley and McKeefe. He bases his claim on his patents, D. R. P. 122,171 (1901), and 131,118, already discussed in this paper.

Bradley and McKeefe also claim that sodium thiosulphate possesses valuable pulping qualities. According to a recently issued patent (Can. Pat. 246,477) they use cooking liquors which contain caustic soda and sodium thiosulphate, or caustic soda, thiosulphate, and sulphite.

Recovery of Spent Liquor

The use of sodium compounds, other than caustic soda and sodium sulphide for the pulping of wood, especially to yield a product essentially cellulose, while it has received careful study from an experimental standpoint, has never found extensive industrial application. Perhaps the most important factor militating against its commercial development has been the high cost of the chemicals as compared with those used in the established pulping processes. The quantity of chemicals required for reducing wood to pulps comparable with pulps already on the market is so large as to be practically prohibitive unless provision is made to recover the sodium compounds from the spent liquors. Practical processes are in operation for the recovery of soda ash from soda spent liquor and of soda ash and sodium sulphide from sulphate spent liquors. Neither of these processes, however, is directly applicable to the recovery of sodium compounds from spent liquors from processes which use sodium sulphite, whether the latter be used alone or in acid or in alkaline solution. By-products of the recovery processes, when applied to sodium sulphite liquor, include thiosulphate and sulphides.

To secure the advantages, therefore, which may be obtained by the use of sodium sulphite in the preparation of high-cellulose pulps, it will be necessary to develop satisfactory recovery processes. In several of the patents referred to above, provision has been made for some method of recovery. Mention may be made also of several patents taken out in Canada by Bradley and McKeefe. These include: The addition of ammonium compounds, the acid radicle of which forms a salt causticizable with lime (Can. Pat. 236,528); the treatment of black liquor of the soda process with sodium bisulphate to remove organic matter (Can. Pat. 236,530); the spraying of black liquor into a heated atmosphere of CO_2 and SO_2 (Can. Pat. 236,531); the treatment of a solution of sodium sulphite or sodium sulphite and caustic soda with SO_2 or sodium bisulphite to regenerate sodium sulphite (Can. Pat. 236,532); the addition of aluminum compounds to black liquor and distillation of the precipitate formed (Can. Pat. 245,831); and the preparation of sodium bisulphite from sodium sulphate or bisulphate by means of SO_2 with calcium carbonate or lime (Can. Pat. 246,302).

This review, incomplete though it may be, indicates the interest and activity which have been and are still being directed toward radical modifications of existing pulping processes. It is to be hoped that the efforts will continue and that the improvements developed will make possible the more efficient use for pulping of various species of wood growing within the economic radius of existing markets. The rapid depletion of those species now considered pulpwoods dictates a serious consideration of little-used species and a strenuous effort to discover the processes which will permit their use.

To Make Paper From Red and Douglas Fir Wood

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., October 1, 1925.—Tests conducted for the past six months by the Oregon Pulp and Paper Company have resulted in a successful process for utilizing red and Douglas fir wood in making high grade paper on a commercial scale.

The resinous wood, formerly regarded as unfit for paper, is treated by the sulphite process as easily and cheaply as white fir and hemlock. Wood needed by the mills will be available to keep the plant running indefinitely after other woods are exhausted.

The new process was developed by C. F. Beyerl, manager and J. B. Wilt, sulphite superintendent.

Bahia Exempts Paper Mill Taxes

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 7, 1925.—American Consul Brett states that the following favors are extended by the State of Bahia under law to factories established for the manufacture of paper from native materials not yet used industrially, such as fibers of banana plants, cotton stalks, bagasse, palms or other plants:—Exemption for 15 years from all state, but not export, taxes; export taxes during 15 years not to exceed 10 reis per kilo (slightly more than ½ mill per pound) of manufactured material; and, the State shall try to secure exemption of Federal duties on machinery imported, and exemption from municipal taxes.

International Pulp Co. Gets Site at Marshfield

PORTLAND, Ore., October 1, 1925.—The International Pulp and Paper Company has taken options on the site for a plant at Marshfield, Ore., that it is said may be devoted to the production of veneer and battery stock from white cedar.

Semi-Cellulose and Semi-Chemical Pulping

A Review of Publications Relating to the Subject

By John D. Rue[1]

For many years there has appeared in the German literature the term *Halb-zellulose*, conveniently translated *semi-cellulose*, indicating a pulp product, obtained usually from wood, in high yields and containing high proportions of lignin as compared with the common chemical wood pulps.

The various processes proposed and investigated in this country and abroad for the production of semi-cellulose as above defined may conveniently be termed seini-chemical inking processes, as they consist essentially of some chemical treatment combined with a mechanical disintegration of the partially cooked wood. A brief review of the various processes hitherto proposed or made operative for the purpose is attempted here, on the basis of experimental work and of literature available in the U. S. Patent Office and elsewhere.

It has never been possible to secure a pulp of any marked degree of strength by grinding raw wood. The fibers are so tenaciously cemented together that they cannot be separated by the usual methods of mechanical disintegration without a large proportion of them being torn and shredded. Mechanical pulp does, however, form a paper which possesses excellent absorbent qualities and is well adapted to the manufacture of cheap printing papers, provided the wood is so chosen and prepared that cleanliness and suitable color are obtained. One of the strong points in behalf of mechanical pulp is the high yield obtained, together with its low cost of manufacture.

Serious and long-continued effort has been expended in the industry in attempting to modify the grinding process so as to increase at low cost the strength and quality of the product without serious loss of yield. The main endeavor has been directed along the line of softening the wood so as to diminish the forces holding the fibers together. The various methods proposed fall into two general groups. According to those falling in the first group, the wood in the form of bolts or blocks is given a steaming or a boiling, either with or without the addition of chemicals. The softened wood is then ground on the standard machines used for mechanical pulp. According to the methods in the second group, the wood, in the form of chips or in some other finely divided state, is given a mild chemical treatment, followed by a mechanical separation of the fibers by such equipment as the edge runner, various pulp refiners, shredders, or even beaters and Jordans.

Steamed or Cooked Ground-wood

As early as 1869 Moritz Behrend, in Germany, discovered that water alone at a temperature corresponding to 6 to 10 atmospheres pressure dissolved the intercellular material in wood to such an extent as to permit the chips to be rubbed apart readily with the fingers. At 6 atmospheres the fiber strength was not harmed, although the color had been changed to a dark brown. He then applied this idea to the softening of logs with steam before they were ground by the usual process. This process, although secretly operated on a commercial scale, was not patented. In the early seventies Oswald Mayh rediscovered the effect of boiling and grinding wood. He took out a German patent on the process in 1872, and later in conjunction with Voelter took out patents in numerous other countries. In practice, however, it was soon recognized that although boiled wood gave a lighter colored pulp than steamed wood, the difference was not of sufficient importance to counterbalance the extra steam costs involved in boiling.

Resch and Kirchner, in 1880-1882, developed their crushing process (D. R. P. 18,447 and 19,192) by which the wood was boiled, steamed, treated in an edge runner, and refined. The product was especially brittle, and admitted of application in only a few kinds of paper and board.

In order to improve the color of the pulp derived from boiled or steamed logs, some of the operators devised the process of first steaming the wood and then, after extraction with water and withdrawal of the water, boiling it with fresh water for several hours under low pressure (about 2 atmospheres). According to Hofmann, *Handbuch der Papier-Fabrikation*, Vol. 2, p. 135 (1897), a very bright color is obtained by adding two parts of oxalic acid to 100 parts of wood during the final boiling.

C. J. Jansson (quoted in Kirchner), *Die Holzschleiferei* (1912), p. 60, reported in 1878 that by keeping the cooker at least two-thirds filled with water and the pressure at or below 2 atmospheres and cooking for 18 to 20 hours he obtained a bright pulp which was forwarded to a Philadelphia mill and there made into a paper whose qualities received the highest praise.

The pulp was somewhat more expensive than that steamed at a high pressure. It is noteworthy that Jansson claimed that pulp prepared in this manner is bleachable.

L. Enge (D. R. P. 20,860 and 20,932), *Paper*, Vol. 17, No. 18, pp. 11-15 (1916), claims the production of a light-colored product by carrying out the heating with water at temperatures either below or above 212° F. at a pressure greater than the steam pressure corresponding to the temperature of operation.

Wood Treated Chemically Prior to Grinding

Various attempts have been made to introduce chemicals in the cooking operation preliminary to grinding. Reference has already been made to Hofmann's recommendation of oxalic acid for the second boiling of the wood. According to Henckel (D. R. P. 34,816), fine, long-fibered, brown pulps suitable for the better grades of paper are obtained by cooking the logs in NaOH. The amount of chemical and the time vary with the wood; e. g., for spruce a cooking with a 3° to 5° Baumé liquor for 3 to 4 hours is required, for pine an 8° to 9° Baumé liquor for 8 to 10 hours, using about 25 cubic feet of liquor per cord of wood. It is claimed that the power required is less and the yield higher than with steamed wood. Kirchner (*Holzschleiferei*, p. 62 (1912) states that pulp thus produced can be considered among the kraft pulps, but points out that the kraft installation must contain not only the grinder but other equipment for mechanical disintegration.

A process for preparing strong ground-wood of light color is described by C. E. Bandelin in a paper read before the American Society of Swedish Engineers on November 2, 1911. The process is ascribed to H. Schultes of Vienna, and was operated on a commercial scale in Sweden about 1890 under Bandelin's superintendence. It was applied to spruce logs in which numerous incisions had been made with a saw. The process consisted essentially in impregnating the wood at high pressures with sodium sulphite containing a small amount of sodium bisulphite, removal of excess liquor, and steaming for several hours, after which the logs were ground. It is reported that samples of paper made from pulp thus prepared "had a slightly yellowish color and were of a glossy and transparent character. In appearance, hardness, and strength they somewhat resembled so-called 'imitation parchment.'"

A process for preparing a white ground-wood from steamed or boiled wood was patented in 1907 by C. G. Schwalbe (D. R. P. 203,230). This he accomplishes by steaming or boiling, with exclusion of air and introduction of reducing agents such as sul-

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phites, bisulphites, and Na_2S, after which the wood is subjected to vacuum, steamed with air-free steam, digested with hot water, and is finally ground.

To secure a light-colored strong pulp from wood, L. Enge (Brit. Pat. 169,802, 1920) proposes to add neutral, acid, or alkaline reagents to the water used in preheating the logs. He also suggests (D. R. P. 353,105) that the wood be treated, before or after steaming, with a bleaching agent such as an acid sulphite. He specifies that the wood after chemical treatment should remain several days before it is ground. It is claimed that by this process a very tough fiber is produced.

C. Bache-Wiig (U. S. Pat. 1,169,597, 1916) proposes to impregnate blocks of wood with SO_2 in a digester exhausted of air, in order to bleach and soften them and then cook them in a solution of NaCl. They are then ground.

J. H. Thickens (U. S. Pat. 1,138,907, 1915) softens the wood with NaOH but improves the penetration by first saturating the logs with steam and then treating them with the caustic alkali solution, which is supposed to be drawn into the wood by the vacuum created by the condensation of the steam. This process is repeated until the wood is in a proper condition for grinding.

One difficulty apparently inherent in all the above chemical pretreatments is inability to secure uniformity of the softening action throughout the log. J. G. Elsner (D. R. P. 211,047) attempts to avoid the difficulty by using Na_2CO_3 or NaOH in the grinding water so as to dissolve the lignin and loosen the fibers during grinding. He claims a fine, long-fibered pulp. Durton (D. R. P. 226,912, 1909) makes the kindred proposal of grinding during the treatment with hot lye.

Disintegration of Wood in Chip Form

A more satisfactory manner of meeting the problem of uniform penetration appears to be that of reducing the log or bolt to a smaller form, such as the chips used in the chemical processes. The mechanical disintegration of chips, however, even after being softened to some extent by a suitable chemical reagent, constitutes a rather serious problem. Numerous types and kinds of equipment have been proposed for the purpose. The pulpwood grinder is not adapted to the disintegration of small pieces of wood. Bandelin (loc. cit.) suggests using an edge runner. While the edge runner undoubtedly does the work well if given sufficient time and power, the capacity is low with a grinder of that type. Furthermore, it does not lend itself readily to continuous operation. Such equipment does, however, find use in some mills for the grinding of screenings and semi-cooked wood for certain special uses.

Attempts have been made to adapt the swing-hammer shredder to the disintegration of softened chips. Satisfactory results have been obtained in certain types of product, but the type of machine is not entirely "fool-proof" and apparently gives little promise of being the final solution of the problem.

Attrition mills are finding some use in disintegrating treated chips, and their application will doubtless be extended as their performance is more thoroughly studied and understood. The Jordan holds a most important place as a refining engine for pulps, but its cutting action is too severe on chips which have been only partly softened. Its cutting action leads to the formation of short sawdust-like particles which obstinately resist the brushing-out action of the machine.

The Claflin engine is better adapted to the purpose, particularly if a fluffy product, in which the presence of bundles of fiber is not objectionable, will suffice.

Cushing (U. S. Pat. 788,633, 1905) combines a softening or expanding of the wood chips by steaming under pressure with grinding in a mill which consists of two stones, one stationary and one rotating beneath it in a horizontal plane, after the manner of the old grist mills. A similar principle is employed by Voith in his refiner for ground-wood screenings, and also by William Denso (D. R. P. 286,874), by Biffar, and by H. Rinderkneaht (D. R. P. 389,265) who seek to make a paper pulp from wood waste by a mechanical means other than ordinary grinding.

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Attrition mills which consist essentially of two metal discs, one or both of which are rotating in a vertical plane, have long been recognized as standard equipment for the pulverizing of mineral material. Only recently, however, have they been studied with a view to the disintegration of fiber bundles such as occur in softened chips, screenings, etc. The results obtained in commercial operation are stated to be very encouraging.

To avoid the cutting action of the Jordan and Claflin engines and to approximate the rubbing and crushing action of the edge runner in disintegrating the bundles of fiber, G. C. Howard (U. S. Pat. 997,064, 1911) proposes a tube-mill containing balls whose size and weight, initially large, are progressively reduced as the operation proceeds.

Another type of equipment previously developed in the mining industry and applied experimentally by the Forest Products Laboratory for the disintegration of softened chips is the rod mill, which has proved very satisfactory on a semi-commercial scale and evidences many points in favor of its use.

W. Burton (U. S. Pat. 959,307, 1909) proposes to disintegrate the wood during the actual process of chemical digestion under pressure. This he accomplishes by rotating the digester, in which he places two loose rolls which, by their action upon each other or upon the walls of the digester, crush the wood and rub the fibers apart. More recently Fournier (*Papier*, Vol. 25, p. 67, 109, 1922) has described a new process in which the material is subjected to mechanical action while still in the liquor.

Chemical Treatment of Chips for Semi-Cellulose

The prospect of developing a satisfactory tool for disintegrating softened chips reopens the whole subject of the manufacture of a semi-cellulose pulp. The more pressing question now is, how are the chips to be softened so that they will disintegrate readily and yet return large yields of pulp and give products which in color and physical properties are suited to the various requirements of the paper maker.

As early as 1874 (Brit. Pat. 2,939) Mitscherlich proposed to soften wood with reducing substances such as H_2SO_3 and bisulphites under a pressure of approximately 3 atmospheres, so as to obtain with subsequent rubbing or grinding a yield of 90 per cent of the wood.

The use of $NaHSO_3$ for pulping occurred as early as 1871-2. (See C. Kellner, *Papier ztg.*, 1885, No. 7, p. 233.) It produced a somewhat hard pulp which could be rubbed in a mortar to a fiber noticeably white in color. It was suggested that regeneration of the brown liquor could be effected by the Tessie du Motay process.

The use of SO_2 in combination with a bisulphite liquor or with NaCl for the preparation of a semi-cellulose pulp suitable as a substitute for ground-wood pulp in the manufacture of newsprint paper was proposed by C. Bache-Wiig (U. S. Pat. 1,084,244) in 1914. In the specification he writes:

"I have discovered that when the air is withdrawn from it, a bleaching and softening gas may be pressed into intimate contact with the fibers composing it in such manner as to bleach them and also to soften but not to destroy the ligneous matter by which they are naturally bound together. The sulfurous or other gas may be pressed in say for one or two hours. The mass may be cooked in a solution of sodium chloride for say two or three hours, which is usually sufficient, although it may be cooked for a longer or shorter period of time, according to the quality or grade of pulp which it is desired to produce. A finer quality of pulp may be produced by longer cooking. If a bisulphite liquor is employed in lieu of a solution of sodium chloride the stock will be cooked for about the same length of time, and the resulting product will be a still higher quality of pulp. The expense of such treatment increases the cost of production. When the stock has been treated in accordance with my method it is washed, and if used as a substitute for ordinary ground-wood pulp in the manufacture of news-print paper, further bleaching will not be required, but if it is desired for use for finer grades of paper it may be further bleached by a sulfurous gas or other bleaching agent. If used

for news-print paper the stock when washed will be subjected to the action of a kollergong, disintegrator, grinder or refiner and then screened, as usual in the treatment of wood pulp. The resulting product when cooked in a solution of sodium chloride is not cellulose, but is what might be termed a half cellulose, yet if cellulose is desired which is suitable for the finer grades of paper a bisulphite liquor will be employed and the stock will be cooked for a longer period of time."

To disintegrate tough and resinous or gummy fibers which are difficult to open out E. L. P. von Ehrenthal (U. S. Pat. 1,153,834, 1915) boils the material in weakly acid sulphite solution at 125° to 130° C., or less, under 5 to 6 atmospheres pressure. The product after mechanical disintegration is digested with NaOH under atmospheric pressure at 80° to 90° C.

Bergerhoff (D. R. P. 279,411) cooks mill waste with waste sulphite liquor at 130° C. for 4 to 5 hours under 5 to 6 atmospheres and disintegrates the half-cooked product in an edge runner to produce a pulp for use in cheap wrappings.

L. Enge (*Wochenbl. f. Papierfab.*, Vol. 54, pp. 245-6, 1923) argues the necessity of good preliminary impregnation of the wood in the production of semi-cellulose. To obtain a white product he recommends steaming with a solution (0.2° to 0.5° Baumé) of $NaHSO_3$. He holds that by a proper selection of methods of treatment a product can be obtained which is suitable for newsprint.

E. Opfermann (D. R. P. 349,880, 1919) uses caustic or carbonated alkalis or the oxides and hydroxides of the alkaline earths, in as concentrated solution as possible, in edge runners, stamping machines, or refining engines, the solution acting during the comminution of the mass. The advantages claimed are that the disintegration can be carried on to any desired extent with a minimum consumption of chemicals and without the application of heat.

T. and E. Kittleson (Norw. Pat. 23,570 Swed. Pat. 40,894) (U. S. Pat. 1,365,039, 1921; *Pulp and Paper Magazine*, pp. 483-8, May 17, 1917) treat wood with cleared black lye and steam it, then treat it with fresh NaOH mixed with cleared black lye and, after washing, grind or chop it into small pieces and crush it to obtain semi-cellulose for paper pulp.

J. Aktschourin (D. R. P. 248,275, 1911) prepares a brown half-cellulose by treating comminuted resinous wood with dilute alkali to separate the resin. Pressures of 3 to 5 atmospheres and a temperature lower than 100° C. are used. The liquor is then squeezed from the wood and the latter cooked at elevated temperatures and pressures in the solution of alkali containing the emulsified resin.

V. Drewson (U. S. Pat. 996,225, 1911) boils wood chips under pressure in a solution of lime and sulphur. After mechanical disintegration the product is boiled with a sulphur eliminating agent such as Na_2CO_3.

Emil Heuser (*Papier ztg.*, Vol. 35, pp. 1511-12, 1910) describes a process for making a kraft paper from pine and fir by cooking the chips in a liquor containing 0.75 per cent Na_2CO_3, 618 per cent NaOH, 2.5 per cent Na_2S, 0.38 per cent Na_2SO_3, and 0.45 per cent Na_2SO_4 for 2 hours at 120° C., reducing the product in a beater with 40 liters of black liquor to every 150 kg. of pulp. H_2SO^4 is added to neutralize the black liquor after beating.

The foregoing review, incomplete though it may be, indicates the varied thought and effort which have been expended in search of ways and means of producing pulps in yields sufficiently high to be considered semi-cellulose. A casual survey of the processes in commercial use fails to reveal any appreciable reflection of these ideas in practice. While steamed ground-wood is a regular commercial product, it constitutes a relatively small tonnage; and except possibly in rare and unheralded instances the other processes live chiefly in patent office records. In so far as this quiescent condition may be due to economic causes, an opportunity for service may even yet be opened to these processes. With an ever-decreasing supply of wood comes a constantly changing economic condition which may so far alter the relations governing the pulp industry that some of these processes and the modified products growing out of them may find profitable application. Particularly is there need for some process which will produce a pulp capable of supplementing and substituting for ground-wood in both quality and cost. Such a product must be made from mill waste, logging waste, or those species of wood which grow and reproduce rapidly and which are not in urgent demand for other uses. It is to be hoped that the need is sufficiently impressive to incite many minds to come to grips with the problem.

A Directory of Specifications

Considerable economy can be realized in the purchase of commodities by the use of specifications. Real competitive bidding can be invited, and the delivery of satisfactory material can be insisted upon. To an ever increasing extent State and city governments, public utilities, and the better organized industries of the country are adopting the use of specifications, which has been a feature of Federal Government purchasing for many years.

Information regarding the best known specifications for more than 6,000 commodities is given in convenient form in the National Directory of Commodity Specifications, which is being issued by the Bureau of Standards with the cooperation of the Bureau of Foreign and Domestic Commerce of the Department of Commerce. The book tells not only what specifications are in general use, but also by whom they were prepared and where copies can be obtained. In it are conveniently indexed for ready finding about 27,000 specifications prepared by the Federal Specifications Board and the separate departments of the Federal Government, by State and city purchasing agents, public utilities, technical societies, and trade associations. At the request of Secretary Hoover an Advisory Board was selected by these interests to represent them in supervising the preparation of the Directory.

The contents include: A Statement and Endorsement by the Advisory Board, A Foreword by Secretary Hoover, a thoroughly classified list of specifications for all types of commodities. There are also included an alphabetical list of commodities, which serves as an index to the specifications, and directions for obtaining copies of specifications listed in the Directory.

Whether you are a producer or a consumer, a seller or a buyer of commodities; whether you are interested in the preparation or in the use of specifications, the Directory contains for you information which you can not afford to do without. It is printed in small, but legible type, and thus the number of pages has been kept at the minimum, 385, without sacrificing the usefulness of the Directory. It is bound in cloth. The price is $1.25 per volume. The book may be ordered from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Memorial Dedicated to W. Murray Crane

[FROM OUR REGULAR CORRESPONDENT]

DALTON, Mass., October 5, 1925.—A handsome marble memorial to the late Senator W. Murray Crane, for many years head of the Crane Paper Mills, was dedicated Saturday, it being also the fifth anniversary of his death. Lawrence A. Haworth, of Dalton, presided and the principal speakers were Chief Justice William Howard Taft of the United States Supreme Court, and Senator William M. Butler, of Boston, both of whom paid worthy tributes to the memory of the ex-senator and paper manufacturer.

On the front row of reserved seats sat Mrs. Crane with her son Bruce Crane; Mr. and Mrs. Winthrop M. Crane and three children and Senator and Mrs. Fred H. Gillett, of Springfield. The memorial was unveiled by Miss Louise Crane, 11 years old, daughter of Mrs. Murray Crane. A group of school children sang. A letter from President Calvin Coolidge was read.

The inscription on the tablet reads as follows: "To W. Murray Crane, 1853-1920—devoted in his service to Community, Commonwealth and Nation. Governor 1900-1903. United States Senator, 1904-1912, this memorial is affectionately dedicated by his neighbors and friends."

The funds for the purchase of the memorial which cost $28,000 were raised by public subscription.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

CLARENCE J. WEST, CHAIRMAN

Stock Density, Water Consumption and Losses in Manufacture of Kraft Paper. Anon. Wochbl. Papierfabr. 56,489 (Apr. 18, 1925). The following data are given and discussed for a superior kraft paper, possessing a breaking length 6000 to 7400 mm.; 0.4% (dry basis) rosin size and 2% alum used; sheet 36 to 37% dry after passing third presss; weight of sheet, 70 to 80 g. per sq. mi.; machine speed, 105 to 110 m. per min.; beater density 6.15 to 7.52%; density machine stock, 0.423 to 0.471%; screen losses, 0.43 to 0.46 g. per l.; production, 1290 to 1375 kg. per hr.; and water consumption 280 to 295 cu. m.—J. L. P.

History of the Chlorination Process for Pulp. P. Bartholow. Paper Trade J. 80, No. 10, 57-58 (Mar. 5, 1925).—A. P.-C.

Rate of Hydration of Lime from Reburned Sludges as Influenced by Its Soluble Salts. A. H. White and R. N. True. Ind. Eng. Chem. 17, 520-521 (May, 1925). The experimental work described shows that sodium salts present in lime sludges retard the rate of hydration of the lime burned from these sludges. The acid radicals SO_3 and NO_3 introduced as sulphur dioxide, ammonium sulphate, calcium sulphate and calcium nitrate exert little effect. Sodium salts introduced as chloride, sulphate, nitrate and carbonate exert an influence roughly in proportion to the amount of soda (Na_2O) present, provided burning conditions are the same. The addition of 2.0% Na_2O to a precipitated calcium carbonate changes the resultant lime so that it hydrated in from 20 to 40 min. instead of in 1 min. All the limes containing sodium sulphate yield hydrates that settle rapidly.—A. P.-C.

Modified System of Cooking Pulp by the Alkaline Processes. R. Woodhead. Paper Trade J. 80, No. 14, 91-93 (Apr. 2, 1925). Preliminary impregnation of the chips with black liquor, carried out commercially for several years showed considerable reduction in coal and chemicals consumption, decrease in evaporating equipment in the recovery room, 7 to 10% increase in yield, and increased strength of kraft paper manufactured from the pulp. The modifications as carried out by the author are described in detail.—A. P.-C.

De Vains Process. W. Schacht. World's Paper Tr. Rev. 83, 990, 992-993 (Mar. 20, 1925); J. Strachan. Ibid. 993. Polemical.—A.P.-C.

Refining Alkali Salts of Raw or Refined Sulphate Resin. C. W. A. Kleine. Swed. pat. 54,947, Dec. 24, 1924. Malodorous and unsaponifiable substances are removed from alkali salts of liquid resin produced as a by-product in the manufacture of sulphate cellulose by treating with hot steam, air or indifferent gases, starting at about 200° and increasing to 400° C. The reaction products are worked directly to soap or decomposed by mineral acids.—C. J. W.

Process and Apparatus for Deodorizing Gases from the Sulphate Pulp Mills. P. Knichalik. Ger. pat. 405,612. Papierfabr. 23, 10 (Jan. 4, 1925). The mercaptans and other odorous gases from the sulphate pulp mill are conducted through dilute black liquor. The apparatus for carrying this out is described.—J. L. P.

Process for Deodorizing Waste Gasses from the Sulphate Pulp Mill. P. Knichalik. Ger. pat. 407,326; addition to 405,612. Papierfabr. 23, 10-11 (Jan. 4, 1925). The odorous waste gases from sulphate pulp mills are deodorized by passing them through fresh liquor, or are passed through black liquor and then washed with fresh liquor.—J. L. P.

Removal of Bad Smelling Substances from Sulphate Turpentine Oil. Chem. Fabrik auf Actien and Hermann Emde. Ger. pat. 374,159. Papierfabr. 23, 198 (Mar. 22, 1925). Sulphate turpentine oil is treated with peracids or their salts.—J. L. P.

Purification of Pine Oil. E. Teupel. Ger pat. 385,073. Papierfabr. 23, 198 (Mar. 22, 1925). After the removal of acid constituents from pine oil it is washed with concentrated hydrochloric acid.—J. L. P.

Mechanical Process

Disintegration of Bamboo and Similar Woody Material. F. Krupp. Ger. pat. 405,356. Wochbl. Papierfabr. 56, 82 (Jan. 17, 1925). The raw material, such as bamboo and the like, is passed through rolls provided with wedge-like teeth to effect a disintegration.—J. L. P.

Continuous Magazine Wood Grinder. P. Priem assignor to American Voith Contact Co. U. S. pat. 1,503,289, July 29, 1924. The feed chains, for positively feeding the charge of wood blocks against the stone, consist of wedge shaped links with their inclined surfaces directed towards the stone.—A. P.-C.

Continuous Grinder. J. M. Voith. Wochbl. Papierfabr. 56,267-268 (Feb. 28, 1925). A discussion concerning the merits of the continuous wood grinder.—J. L. P.

Hydraulic Multiple Press or Continuous Grinder? O. Herdey. Wochbl. Papierfabr. 56, 201-202 (Feb. 14, 1925). A brief discussion.—J. L. P.

Grinders. E. Belani. Papierfabr. 23, 61-63 (Feb. 1, 1925). A discussion concerning the construction and operation of the continuous grinder as compared with the multiple press grinder.—J. L. P.

Hot Grinding with the Hydraulic Multiple Press Grinder and the Voith Continuous Grinder. Klimpke. Zellstoff U. Papier 5, 45-46 (Feb. 1925). A discussion of the article on this subject by Teicher in the Dec. 1924 issue of the same journal.—J. L. P.

Manufacture of Groundwood. Ch. J. Sternkopf. Ger. pat. 400,049. Papierfabr. 23, 100 (Feb. 15, 1925). The wood to be ground is treated with water which has been heated by the grinding process. An apparatus for carrying this out is described.—J. L. P.

New Grinder. Klimpke. Wochbl. Papierfabr. 56, 48-50 (Jan. 10, 1925). Supplementary to an article by the same author in the same journal, No. 50, page 3232 (1924).—J. L. P.

Beating

Stock Density and Losses in the Manufacturing Process. H. Fay. Wochbl. Papierfabr. 56, 128-130 (Jan. 31, 1925). A good regulating device for the paper stock is essential for efficient operation. Slight variation of the stock density results in losses. A dense, well sized paper made from a greasy stock retains fillers in a better way and results in less losses than a paper made from unsized and raw stock. A series of tests carried out on paper and paperboard machines are listed.—J. L. P.

Beater Roll Construction. E. Belani. Wochbl. Papierfabr. 46, 336-338 (Mar. 14, 1925). The Youngchild beater roll is compared with German beater rolls of basalt construction. A similar economy in power is maintained.—J. L. P.

Trimbey Regulator. B. H. Moerbeek. Wochbl. Papierfabr. 46, 425-427 (Apr. 4, 1925); Zell. U. Papier 5, 127-128 (Apr.). The Trimbey stock regulator is sketched and described.—J. L. P.

Process of Producing Paper Pulp and Apparatus Therefor. C. W. Shartle assignor to the Shartle Bros. Machine Co. U. S. pat. 1,503,138, July 29, 1924. The raw stock is fed continuously to a breaker beater which includes a screened discharge chamber arranged to cause a gravity discharge of the reduced stock to and through a receiving vessel which includes in itself adjustable means for automatically maintaining the water and raw stock in the breaker at a predetermined level.—A. P.-C.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

Practical Results of Budgeting *

By Ralph H. Allen, Asst. Treas., Thomas A. Edison, Inc.

The man who says he does not believe in business budgeting or forecasting is stating a paradox. Consciously or unconsciously every man does believe in and does use budgeting or forecasting in his private life and in his business as well. The form used may vary as well as the extent of the use, but planning ahead or looking ahead—another name for forecasting—is an action inseparable from civilized life. The aim of all science is to reduce phenomena to a state of predictability. Civilization progresses only so far as it is able to anticipate the future. Business succeeds only when its action today is balanced with tomorrow's demands.

By "business forecasting" is meant the practice of anticipating the future with a view to avoiding or mitigating business catastrophies, providing for periods of want and depression, and taking all possible advantage of approaching changes.

The term "budget" is more limited in its meaning, and generally refers to a component part of a general forecast, a supporting schedule or statement, as "cash budget," "sales budget," etc.

"Business forecast," as used in this article, refers to a prophecy of the business for the next period and represents an aggregation and co-ordination of all the individual cash-sales, manufacturing or other budgets.

In an article, "Business Forecasting in the Edison Industries," a statement was made as to the importance of forecasting, the essential being as follows:

Ability to forecast accurately is the barometer of civlization, and ability to forecast accurately in business is the barometer of good industrial management. Hence it can be stated as a cardinal principle that we can determine whether or not a business is being well managed by discovering how accurately it anticipates business conditions. Obviously, if we wrongly estimate tomorrow's business demand we will either overstock our shelves with unsalable goods, or forfeit profits which might have been made on unfilled orders, either error resulting possibly in financial ruin.

Today's business is in anticipation of tomorrow's requirements. When we say that, other things being equal, the business which sees fartherest ahead wins, we are simply saying in other words that we stand a much better chance of getting to a place if we know where we are going. In fact, it is this central idea which is behind every sales quota, departmental appropriation, and personal budget.

Business men who never before thought of forecasting their business are beginning to sense its benefits now that the federal government departments are lined up under a systematic national budget. The budget in this case is the first step toward really reorganizing an unwieldy, archaic and expensive system of federal bureau administration. Many private corporations and firms whose methods are also archaic, unwieldy and expensive, can profit by the example.

Budgets Are Built on Past Experience

This is all very well, someone says; we would all like to know about the future; show us the formula that we may become millionaires overnight. There is no specific formula. Time, patience, experience, reliable and complete statistics, and the development of business acumen through hard knocks, are all required to produce an intelligent and reliable forecast in any business.

Anyone who has seriously considered the methods and purposes of forecasting realizes that foresight is 90 per cent hindsight. No magic combination of figures, formulas, or tables will forecast a man's business for him. No more could a stranger, unfamiliar with a certain business, properly draw up a forecast for it on demand. Success depends, in the first place, upon the existence of reasonably complete and reliable data, and given this, is in proportion to the effort made to analyze and use these records of the past.

TABLE 1—CONDENSED BUDGET
Edison Storage Battery Company, Year Ending February 28, 1926.

	DOLLARS	PER CELL	% TO SALES
Sales:			
Cells	xx	xx	xx
Supplies, repairs, etc.	xx	xx	xx
TOTAL	xx	xx	xx
Less ..% required percentage of profits to be set aside for the management....	xx	xx	xx
NET	xx	xx	xx
Cost to make: (Detail)	xx	xx	xx
NET	xx	xx	xx
Cost to sell: (Detail)	xx	xx	xx
NET	xx	xx	xx
Miscellaneous expenses: (Detail)	xx	xx	xx
Net profit after deducting %	$ xx	xx	xx

Business forecasting, like any other art or science in its infancy, is now wavering between theory and practice. Some corporations become so enthusiastic over its possibilities that separate departments are organized to take care of it. Forms without number may be prepared, many men may be employed to prepare and keep them. Expense may increase. Thus may a theoretical application of a practical idea ruin the object. Cost Section

* From Management & Administration.

A proper budget or forecast should save money, reduce overhead, and improve executive control.

When setting up the system of budgetary control in the Thomas A. Edison Industries, Charles Edison, Chairman of the Board of Directors, stated:

"It is understood that this system is not to cost money, but to save it. Pay-roll and expenses are not to be increased. In fact, I shall be disappointed if, at the end of the first year, you shall be unable to show me that it has not saved the corporations many thousands of dollars."

The test of any forecast—the tests that sends many forecasts into the discard—is the test of comparison with the final figures.

The forecast of total sales in the Thomas A. Edison Industries for the year ending February 28, 1925, a forecast which was made 12 months in advance, was 91 per cent correct.

The monthly estimates of surplus made 30 days in advance were on an average 98 per cent correct.

A variance of more than 5 per cent in any of the *monthly* estimates of sales, expenses or profits is considered a reflection on the estimator.

Technique of Business Forecasting

The function of budgeting or forecasting is fundamentally allied with the other functions of good management. Therefore, it is logical to expect that it may be carried on as an integral part of the functions of management. It is unnecessary to build up a superorganization to handle it.

Those managers who are responsible for carrying out the policies of the management, as to financing, selling, and manufacturing, are the ones best fitted to make up the individual budgets; and they are the ones who profit most thereby.

The origin of the budget, or its source, is among the departments themselves. The first figures or estimates emanate from the men who are on the firing line, in the factory, or in the office.

Whence do the figures go from that point?

The answer to this question is explained in detail in the Manual of Instructions covering Budget Control in the Edison Industries, which is reproduced below:

I. Q. What are the advantages of having a budget? Why should we have one at all?

A. The main object of a budget is to secure better control. Some of the advantages are:

1—At all times the budget serves as a measuring stick to compare actual performance with promises and standards, showing not only what may be done, but what should be done;

2—Every manager in the organization has a definite goal to attain;

3—Sales and production plans are co-ordinated with financial resources;

4—It provides a basis for working out in advance a policy as to:

A—Investments,
B—Expansions,
C—Bank loans,
D—Purchases,
E—Selling prices,
F—Production.

5—Costs may be used for purposes of control by comparison with standard budgets rather than as historical information.

6—Indirectly it should be an aid to good management in the reduction of waste, better balanced inventories, definite assignment of responsibility for expenditures, more continuous operation, greater regularity of employment, and standardization of processes and equipment.

7—Taken in conjunction with the "business cycle," the budget gives warning to be cautious and the cue to go forward.

8—The United States government thought well enough of it to put in a budget system. The largest corporations in this country have followed its example.

9—If superintended with commonsense, the budget should result in economy.

II. Q. What will be the expense of following the budget program herein submitted?

A. The expense will be nil, the work being carried on without additional help.

The preparation of the budgets under the direction of the departmental heads will not require a lot of detail.

The co-ordination of the various budgets into a master budget will be done in the office of the assistant to the chairman of the board.

III. Q. How far will the managers go in budgeting their business?

A. The benefits of budgeting will be extended to all production departments and selling branches wherever practicable.

Wherever this is done, a copy of the production, or the sales budget, will be attached to the budget submitted by the manager.

IV. Q. What is the basis of the manager's budgets?

A. Several conditions should be taken into consideration, but the principal ones are:

1—Past performances.
2—Consideration of any changes in Edison policy.
3—National business conditions.
4—Manufacturing limitations.
5—Selling limitations.

V. Q. What are the budgets to cover.?

A. Sales, expenses and profits for the year, in a form similar to Table 1.

VI. Q. How are the budgets to be handled?

A. 1. They are to be prepared by the manager.
2. They are to be sent to the Chairman of the board.
3. They are to be checked by the assistant to the chairman of the board.
4. Approved by the chairman of the board.
5. Approved copy to be returned to the manager.
6. Consolidation into a master budget by the assistant to the chairman of the board.
7. Copies of master budget to be distributed as follows:

A—Original to chairman of the board.
B—Carbon copy to president.
C—Carbon copy to assistant to chairman of the board.
D—Carbon copy to treasurer.
E—Carbon copy to secretary.
F—Carbon copy to auditor.

VII. Q. What use is to be made of the budget during the year?

A. Comparison of the budget with actual figures, to be made from time to time throughout the year by the assistant to the chairman of the board, and result thereof with explanation of differences submitted to chairman of the board and/or the president. The budget is to be used as a basis of manufacturing (production), selling and financing throughout the year.

VIII. Q. Are budgets to be revised during the year?

A. Yes, whenever any extraordinary change in the trend of business so warrants, a revised budget will be requested (of any manager) by the chairman of the board or the assistant to the chairman of the board.

IX. Q. What percentage of accuracy should be attained?

A. If 95 per cent of accuracy can be maintained it means that the business may be run, generally speaking, with reasonable safety on the budget figures without waiting for the actual figures to come through.

X. Q. What is the organization for budgetary control?

A. Chairman of the board will have direct control of all matters pertaining to the budgetary program; to consider all departmental estimates, make changes and revisions; periodically receive through his assistant reports showing a comparison of the performance for the period with the estimated performance. No estimate is effective until it has the approval of the chairman of the board.

XI. Q. What are the duties of the assistant to the chairman of the board?

A. Will act as his personal representative in all matters pertaining to the budgetary program.

General duties:

1—To receive from the managers the periodic estimates, or budgets, in form and manner directed by him.

2—To prepare from the budgets an estimated balance sheet, and an estimated statement of profit and loss.

3—To receive the estimates as approved, and transmit them to the managers.

4—To furnish the chairman of the board, and/or the president, with periodic reports showing a comparison between the estimated performance and the actual performance for the period for each division.

TABLE NO. 2—BALANCE SHEET—PROFIT-AND-LOSS STATEMENT

The following figures are not in any sense indicative of the business of Thomas A. Edison, Inc., or any of its constituent companies, but are purely for the purposes of this article.
Dollars in thousands).

	Cash	Receivables	Inventories	Deferred Charges	Notes Payable Banks	Other Payables	Accruals	Investments
Sales	....	1000	700	..	..	..	..	..
Collections	950	850	..	..	100	..	..	..
Disbursements:								
Pay-rolls	200	..	..	..	..	..	200	..
Other	1008	..	..	8	200	650	10	..
Purchases	.	..	480	..	..	555	..	..
Journal Transfers:								
Income from investments	.	..	..	1	..	..	..	..
Pay-Rolls	..	..	152	..	..	..	217	..
Plant Reserves	..	..	10	..	..	..	..	..
Income taxes	..	..	..	..	..	..	8	..
Miscellaneous				Ins. 2 Int. 2		Com. 50 Roy. 4		
TOTALS	238	150	58	2	100	95	69	..
Beginning balance	503	1147	2946	27	1000	725Acc.12 Tax100		200
Ending Balance	.245	1297	2888	29	900	630Tax108 Acc.73		200

	Working Cap.	Plant	Plant Reserves	Bonds	Capital	Surplus
Sales	300	..	..	..	..	300
Collections	..	..	..	..	..	..
Disbursements						
Pay-rolls	..	..	..	..	..	..
Other	140	..	..	100	..	40
Purchases	75	Eq. 5	..	..	..	70
Jrnl. Transfers:						
Income from Investments:	1	..	..	..	..	1
Pay-rolls	65	..	..	..	..	65
Plant Reserves	10	..	Bldg. 2 Eq. 8	..	..	..
Income taxes	8	..	..	..	..	8
Miscellaneous	11	..	..	..	..	11
TOTALS:	38	5 L. 50	10	100	..	57
Beginning balance:	2986	B. 420 E. 765	B. 105 E. 218	500	2500	898
Ending balance	2948	L. 50 B. 420 E. 770	B. 107 E. 226	400	2500	955

Unless some systematic plan is followed, when all the budgets, appropriations, schedules, estimates, and forecasts are brought together, the industrial manager may well pause in bewilderment and wonder whether there is not some quick, efficient way to co-ordinate and clearly present this information, so as to show each element in its true relation to the other and to the whole. The Edison Industries have found the best method of doing this—the most effective means of co-ordinating its forecasts—to be the balance-sheet-profit-and-loss statement.

Business men are beginning to realize more and more the importance of the balance sheet as the mirror of their business, whether they are interested in credit negotiations, bank loans, mergers, reorganizations, or current conditions.

The balance sheet speaks a universal language understandable to all financial men, accountants, credit men and business managers in general. A forecast constructed in its terms needs but little explanation. It is ideal as a forecasting medium, whether divisional or departmental balance sheets are used, or the grand total consolidated balance sheet for the business as a whole. If at the same time the profit and loss items can be indicated, both the causes and effects of the business results may be seen at a glance.

The balance-sheet-profit-and-loss statement, the form of which as used in the Edison Industries is shown in Table 2, is dependent for its component parts upon the reports, budgets, and estimates of a number of subordinate officials. In practice conditions reflected on this statement have in many cases called for immediate attention, so that correction could be made before damage was done. Through the use of this form it is possible to furnish estimated balance sheets to stockholders, directors, officers, or banks, either before or within a few days after the date of closing the books. When the actual figures arrive, perhaps a month or more later, any variation may be analyzed readily.

TABLE 3—TREASURER'S DEPT.—CASH ESTIMATE
MONTH OF MAY, 1925
(Dollars in thousands)

Balance beginning		503
Receivables collected	850	
Income from investments		
Bills payable, discounted Blank Bank due	100	950
		1,453
Disbursements:		
Bills payable, repaid X Bank	100	
Bills payable, repaid Y Bank	100	
Pay-rolls, 4 at 50	200	
Accruals, commissions paid	10	
Deferred charges:		
Insurance Premiums:	6	
Interest on bank loans	2	
Payables paid	650	
Expenses	40	
Bonds redeemed	100	1,208
Balance end		245

Every time this analysis is properly made it results in greater accuracy in the next forecast.

To simplify the compilation of the balance-sheet-profit-and-loss statement in actual use, all debits are black and all credits are red. In the form shown in Table 2 debits are in roman while credits are italicized.

Possibly that portion of a company's assets giving most concern to the management is its cash. A proper bank balance must be maintained if the company is a borrower, and since the world's painful experience in deflation after the World War, business men more and more recognize the fact that the profits realized in cash are the only profits which, not being subject to revaluation downwards, may be called real.

Most concerns budget their cash income and outgo periodically, some using elaborate methods covering weeks and months ahead and some looking forward only a few days. As all profits must finally be realized in cash and all obligations settled in cash, it naturally

TABLE 4—PURCHASING DEPARTMENT ESTIMATE OF PURCHASES
MONTH OF MAY, 1925
(Dollars in thousands)

Raw material, factory supplies, etc.		480
Equipment		5
Expense		
Advertising	50	..
Other	20	70
TOTAL		555

follows that the efficient treasurer must keep in close touch with all the departments of the business, their problems, and needs. Being a member of the board of directors he has knowledge of any proposed heavy expenditures and is thereby enabled to pass on their advisability from the viewpoint of their ultimate payment.

For his own guidance, and that of the board of directors, the treasurer forecasts his income and expenditures as shown in Table 3. As in the case of all the estimates used in making up the balance sheet-profit-and-loss statement, this estimate is submitted on the first of the month to which it applies.

(Continued on page 64)

Northern Superintendents Meet at Groveton

GROVETON, N. H., October 13, 1925.—The National Division of the American Pulp and Paper Mill Superintendents Association met here Saturday of last week.

The speakers included Warren B. Bullock, manager of the Import Committee of the American Paper Industry. Mr. Bullock spoke on "Paper and the Customs Service." In part his address was as follows:

Paper and the Customs Service

If the Import Committee of the American Paper Industry has accomplished any one thing, it has proved that the Tariff Act of 1922 can be enforced to the advantage of the domestic industry, by its fight upon unfair foreign competition.

The work of the Import Committee has not been the modification of the existing laws, but the enforcement of the laws now on the books.

When the Committee was formed, it was specifically decided to confine its activities to the ferreting out and stamping upon every kind and case of unfair foreign competition which could be combatted by the application of existing law.

This policy has been carried out to the letter, and it is a pleasure to record that scores of cases of unfair foreign competition, involving dumping, under-valuation and misclassification have been successfully concluded.

Even more cases are still pending, and an example of the situation faced by the Committee is the fact that on a single day in New York alone there were sixty-five separate under-valuation cases scheduled for trial, and on another day in the same city sixteen misclassification cases. The same condition exists in all other important ports, and the Import Committee has followed every case in which there was suspicion of unfair practice, regardless of the amount or grade of paper involved.

In other words, the Import Committee has proved that the present tariff act has teeth, and has made certain that the jaws of the law were clamped down in every case involving a violation of the nation's laws, as far as paper importations are concerned.

The fact that the Import Committee has been proceeding at all times with the utmost care to initiate no case in which it could not present specific evidence of evasion of the law is so well recognized that in many appraisement cases importers have voluntarily increased the valuations in invoices of foreign papers, rather than take their cases to the customs courts.

Although the Import Committee of the American Paper Industry did not come into formal existence until October, 1, 1924, its campaign for the enforcement of the Tariff Laws as regards paper was begun in a preliminary way several months earlier.

This was at the time when the so-called "Wise-Plan" was promulgated by the Salesmen's Association of the Paper Industry, the plan which was eventually followed in the formation of the Import Committee, and the selection of Henry A. Wise, for whom the plan was named, as general counsel for the Committee.

It was known from the beginning that the problem was serious, and that there was a great work to be done in behalf of the American Paper Industry. Even the members of the Committee did not appreciate until the work was well under way how great that problem was. Even then, however, it was realized that the situation was so serious that it could be ameliorated only by the most aggressive measures. The Import Committee, therefore, was formed with members representing the chief groups in the industry.

The Paper Industry was asked for funds adequate to finance a comprehensive program, which should involve the securing of able customs experts, foreign investigations to provide information of shipments to the United States, and the persecution of every questionable importation before the customs courts. Sufficient funds were quickly subscribed to initiate this work. Much has been done, but more remains to be undertaken.

Henry A. Wise Engaged as Counsel

In pursuance of the program of the Import Committee, Henry A. Wise was engaged as general counsel for the Committee and John R. Hecht, one of the best of the government's customs officials as Custom Expert.

Meanwhile, the importers have made every effort to continue their operations as before, taking every possible advantage of law and customs precedure to bring in paper at as low a rate of duty as possible. Experience with their activities has demonstrated the wisdom of the decision of the Import Committee to select the most able legal talent available to handle its work. Had less able legal advice been secured, it is beyond question that the importers and not the American manufacturers would have won many of the cases initiated. In every case which has as yet been finally decided by the Board of General Appraisers, the decision has been adverse to the importers, in other words, the policy of the Import Committee to proceed only in accord with the facts has been justified by this successful showing.

Does Not Interfere With Legitimate Business

From the beginning of the Import Committee's existence it has been the intent not to interfere with the legitimate international flow of commodities, but only to make certain that the United States tariff laws are complied with, and the American manufacturers thereby given an equal opportunity to compete with foreign manufacturers in the American market.

The Committee has already learned from its experience of the past year, that eternal vigilance is necessary to prevent efforts to import foreign paper unfairly through evasion of existing law.

The Paper Industry of the United States is to be congratulated upon having seen that this situation required thorough, and not haly-way measures. It is to the fact that the industry did not view its problem in a small way, but with broad vision, that the accomplishments recorded have been possible.

RESULTS OF BUDGETING

(*Continued from page 63*)

The purchasing agent, in close touch with the factory, can estimate its needs for the coming month with fair accuracy. To do this efficiently will necessitate conferences with the factory manager, sales manager, chief storekeeper, production man, and others. The value of such conferences is obvious.

In addition to the factory requirements, other obligations to be assumed during the month must be scheduled. The advertising charges, as a rule, may be accurately forecasted, as may other expenditures for service, etc.

When the purchasing agent prepares his budget, it should be checked with the treasurer to ascertain if the expenditure dovetails into the financial program, and is in accord with that adopted by the directors.

The purchasing budget should be prepared in detail and show purchases by kind and value, segregated so that it may readily be used for forecasting purposes. The form shown in Table 4 gives without details the analysis for the proper preparation of the forecast.

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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING OCTOBER 10, 1925

SUMMARY

News print .....586 rolls, 225 bls.
Printing paper .....161 rolls, 241 cs., 311 bls.
Cigarette paper .....1503 cs.
Wall paper .....31 cs., 15 bls.
Paper hangings .....41 bls., 7 cs.
Wall boards .....35 cs.
Wrapping paper .....26 bls.
Packing paper .....236 bls., 1 cs.
Decalcomania paper .....11 cs.
Filter paper .....32 bls., 87 cs.
Drawing paper .....6 cs.
Tissue paper .....21 cs.
Photo paper .....5 cs.
Draughting paper .....1 cs.
Crepe paper .....100 bls.
Writing paper .....58 cs.
Fancy paper .....6 cs.
Colored paper .....46 cs.
Surface coated paper .....161 cs.
Straw board .....156 rolls
Paper shells .....8 cs.
Spools of paper .....52 cs.
Envelopes .....1 cs.
Miscellaneous 492 bls., 266 rolls, 174 cs., 17 pkgs.

CIGARETTE PAPER

De Manduit Paper Corp., Indep. Hall, St. Nazaire, 342 cs.

American Tobacco Co., Indep. Hall, Bordeaux, 1,000 cs.

Liggett & Myers Tobacco Co., Vincent, Dunkirk, 25 cs.

Max Spiegel & Son, Chicago, Bordeaux, 11 cs.

P. J. Schweitzer, Pr. Harrison, Marseilles, 99 cs.

Standard Products Corp., La Savoie, Havre, 20 cs.

Equitable Trust Co., Anna C., Trieste, 6 cs.

WALL PAPER

W. H. S. Lloyd & Co., Carinthia, Liverpool, 1 cs.

A. C. Dodman, Jr., Inc., Carinthia, Liverpool, 3 bls.

F. J. Emmerich, Minnewaska, London, 2 bls.

F. J. Emmerich, A. Ballin, Hamburg, 2 bls.

A. C. Dodman, Jr., Inc., Olympic, London, 8 bls., 8 cs.

A. C. Dodman, Jr., Inc., Mauretania, Bordeaux, 1 cs.

Titan Shipping Co., Mauretania, Havre, 21 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 28 bls.

W. H. S. Lloyd & Co., Minnewaska, London, 13 bls., 7 cs.

WALL BOARDS

O. M. Baxter, Stockholm, Gothenburg, 35 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Berlin, Bremen, 486 rolls.

Chemical National Bank, Andania, Hamburg, 100 rolls.

J. P. Hefernan Paper Co., Anna C., Trieste, 225 bls.

PRINTING PAPER

P. C. Zuhlke, Pittsburgh, Antwerp, 59 cs.

Marvin Co., Pittsburgh, Antwerp, 53 cs.

B. F. Drakenfeld & Co., Carinthia, Liverpool, 30 cs.

J. H. Scott Paper Co., Andania, Hamburg, 68 rolls.

Gallagher & Ascher, Andania, Hamburg, 25 cs.

Meadows, Wye & Co., Minnewaska, London, 1 cs.

Keuffel & Esser, A. Ballin, Hamburg, 93 rolls.

C. Steiner, A. Ballin, Hamburg, 27 cs.

Hensel, Bruckman & Lorbacker, A. Ballin, Hamburg, 21 cs.

Martin & Bechtold, Berlin, Bremen, 23 cs.

A. C. Dodman, Jr., Inc., La Savoie, Havre, 2 cs.

J. P. Hefernan Paper Co., Anna C., Trieste, 311 bls.

WRAPPING PAPER

Maurice O'Meara Co., Anna C., Trieste, 26 bls.

PACKING PAPER

Maurice O'Meara Co., N. Amsterdam, Rotterdam, 1 cs.

Rohner & Gehrig Co., A. Ballin, Hamburg, 52 bls.

J. P. Hefernan Paper Co., Stockholm, Gothenburg, 184 bls.

DECALCOMANIA PAPER

L. A. Consmiller, Geo. Washington, Bremen, 8 cs.

Phoenix Shipping Co., Geo. Washington, Bremen, 3 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., American Merchant, London, 5 cs.

F. Henjes, Jr., Geo. Washington, Bremen, 1 cs.

E. Fougera & Co., Chicago, Bordeaux, 81 cs.

A. Giese & Son, Chicago, Bordeaux, 21 bls.

Orbis Products Trading Co., Chicago, Bordeaux, 11 bls.

DRAWING PAPER

Devoe & Reynolds Co., A. Merchant, London, 2 cs.

Keuffel & Esser, A. Ballin, Hamburg, 4 cs.

TISSUE PAPER

F. C. Strype, Carinthia, Liverpool, 21 cs.

PHOTO PAPER

J. J. Gavin & Co., Adriatic, Liverpool, 3 cs.

Defender Photo Supply Co., Siboney, Havana, 2 cs.

DRAUGHTING PAPER

A. W. Fenton, Inc., Adriatic, Liverpool, 1 cs.

CREPE PAPER

S. Haufling & Co., A. Ballin, Hamburg, 100 bls.

WRITING PAPER

Bernard, Judae & Co., Berengaria, Southampton, 1 cs.

Guibout freres, Olympic, Havre, 17 cs.

Japan Paper Co., Olympic, Havre, 20 cs.

Defiance Manufacturing Co., Bankdale, Marseilles, 10 cs.

FANCY PAPER

Brown Bros. & Co., Pittsburgh, Antwerp, 1 cs.

Whiting & Patterson Co., Inc., Mauretania, Havre, 5 cs.

COLORED PAPER

E. Dietzgen, A. Ballin, Hamburg, 46 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Pittsburgh, Antwerp, 85 cs.

P. Puttmann, Pittsburgh, Antwerp, 51 cs.

Gevaert Co. of America, Pittsburgh, Antwerp, 25 cs.

STRAW BOARD

A. Vuyck, N. Amsterdam, Rotterdam, 156 rolls.

PAPER SHELLS

J. I. Bernitz, N. Amsterdam, Rotterdam, 8 cs.

SPOOLS OF PAPER

J. I. Bernitz, N. Amsterdam, Rotterdam, 52 cs.

ENVELOPES

Japan Paper Co., A. Merchant, London, 1 cs.

PAPER

O. Roth, Berengaria, Southampton, 1 cs.

Titan Shipping Co., Berengaria, Southampton, 19 cs.

Perry, Ryes & Co., Cameronia, Glasgow, 86 cs.

J. R. Livermore, Inc., Conte Verde, Genoa, 13 bls.

Japan Paper Co., Conte Verde, Genoa, 39 cs.

F. L. Kraemer & Co., Minnewaska, London, 3 cs.

C. K. McAlpine & Co., Stockholm, Gothenburg, 119 rolls.

Maurice O'Meara Co., Stockholm, Gothenburg, 244 bls.

Gilbert Paper Co., Stockholm, Gothenburg, 59 bls., 5 rolls.

Arkell Safety Bag Co., Stockholm, Gothenburg, 100 rolls.

J. P. Hefernan Paper Co., Stockholm, Gothenburg, 11 bls.

The Borregaard Co., Inc., Stockholm, Gothenburg, 165 bls., 42 rolls.

E. H. Sargeant & Co., Stockholm, Gothenburg, 6 cs.

E. & H. Levy, La Savoie, Havre, 2 cs.

Tiffany & Co., La Savoie, Havre, 4 cs.

W. H. S. Lloyd & Co., La Savoie, Havre, 1 cs.

The Eleto Co., La Savoie, Havre, 17 pkgs.

Wilkinson Bros. & Co., Inc., N. Amsterdam, Rotterdam, 3 cs.

Japan Paper Co., Olympic, London, 10 cs.

RAGS, BAGGINGS, ETC.

Anglo-South American Trust Co., Castillian Prince, Buenos Aires, 28 bls. rags.

A. H. Searle, Cameronia, Glasgow, 3 bls. rags.

Brown Bros. & Co., Cameronia, Glasgow, 39 bls. rags.

Equitable Trust Co., N. Amsterdam, Rotterdam, 100 bls. rags.

E. J. Keller Co., Inc., N. Amsterdam, Rotterdam, 47 bls. rags.

E. J. Keller Co., Inc., N. Amsterdam, Rotterdam, 43 bls. bagging.

The Stone Bros. Co., Inc., N. Amsterdam, Rotterdam, 266 bls. rags.

B. D. Kaplan, N. Amsterdam, Rotterdam, 8 bls. rags.

Mechanics & Metals National Bank, N. Amsterdam, Rotterdam, 219 bls. rags.

Mechanics & Metals National Bank, N. Amsterdam, Rotterdam, 151 bls. bagging.

Atlas Waste Manfg. Co., N. Amsterdam, Rotterdam, 75 bls. rags.

E. J. Keller Co., Inc., Indep. Hall, St. Nazaire, 45 bls. rags.

The Stone Bros. Co., Inc., Indep. Hall, Bordeaux, 20 bls. bagging.

J. J. Patricof, Indep. Hall, Bordeaux, 60 bls. bagging.

L. H. Abenheimer, Geo. Washington, Bremen, 111 bls. tares.

A. W. Fenton, Inc., Vallemore, Naples, 152 bls. rags.
Brown Bros. & Co., Vallemore, Naples, 160 bls. rags.
W. Schall & Co., Caucasier, Antwerp, 186 bls. flax waste.
Mechanics & Metals National Bank, Caucasier, Antwerp, 258 bls. rags.
Equitable Trust Co., Caucasier, Antwerp, 121 bls. rags.
Garfield National Bank, Caucasier, Antwerp, 384 bls. rags.
The Stone Bros. Co., Inc., Caucasier, Antwerp, 73 bls. rags.
The Stone Bros. Co., Inc., Carinthia, Liverpool, 21 bls. rags.
B. D. Kaplan, Carinthia, Liverpool, 16 bls. rags.
Brown Bros. & Co., Andania, Hamburg, 557 bls. rags.
Bank of New York, Andania, Hamburg, 165 bls. rags.
New York Trust Co., Andania, Hamburg, 86 bls. rags.
Brown Bros. & Co., Minnewaska, London, 24 bls. rags.
Brown Bros. & Co., Berlin, Bremen, 141 bls. rags.
Chase National Bank, Berlin, Bremen, 317 bls. rags.
L. H. Abenheimer, Tagliamento, Genoa, 231 bls. rags.
A. W. Fenton, Inc., Tagliamento, Genoa, 209 bls. rags.
A. W. Fenton, Inc., Tagliamento, Leghorn, 395 bls. rags.
National Bank of Commerce, Providence, Marseilles, 115 bls. rags.
Amsinck, Sonne & Co., Inc., Providence, Marseilles, 113 bls. rags.
Irving Bank Columbia Trust Co., Providence, Marseilles, 170 bls. rags.
A. W. Fenton, Inc., A. Ballin, Hamburg, 544 bls. rags.
Equitable Trust Co., A. Ballin, Hamburg, 32 bls. rags.
National City Bank, A. Ballin, Hamburg, 31 bls. rags.
Salomon Bros. & Co., A. Ballin, Hamburg, 165 bls. bagging.
Brown Bros. & Co., A. Ballin, Hamburg, 438 bls. rags.
L. Sher, Vincent, Dunkirk, 40 bls. cotton waste.
The Stone Bros. Co., Inc., Vincent, Havre, 133 bls. rags.
E. J. Keller Co., Inc., Vincent, Havre, 26 bls. rags.
E. J. Keller Co., Inc., Vincent, Havre, 78 bls. bagging.
Mutnick Bros., Vincent, Havre, 28 bls. rags.
Castle & Overton, Inc., Vincent, Havre, 67 bls. bagging.
Atlas Waste Manfg. Co., Vincent, Havre, 48 bls. rags.
V. Galaup, Vincent, Havre, 124 bls. rags.
W. Steck & Co., Vincent, Havre, 36 bls. rags.
Atterbury Bros., Inc., Vincent, Havre, 143 bls. rags.
D. M. Hicks, Vincent, Havre, 51 bls. rags.
Brown Bros. & Co., Bankdale, Marseilles, 395 bls. rags.
Mechanics & Metals National Bank, Bankdale, Marseilles, 171 bls. rags.
American Express Co., Bankdale, Marseilles, 38 bls. rags.
Mechanics & Metals National Bank, Cornish Point, Leith, 73 bls. rags.
Mechanics & Metals National Bank, Cornish Point, Belfast, 131 bls. rags.
M. Snedeker Corp., Cornish Point, Belfast, 90 bls. rags.
C. R. Spence, Cornish Point, Belfast, 60 bls. rags.
Brown Bros. & Co., City of Hankow, Hull, 86 bls. paper stock.
Central National Bank, Winona, Algiers, 80 bls. rags.
Mechanics & Metals National Bank, Winona, Algiers, 282 bls. rags.
Chase National Bank, Hellig Olav, Copenhagen, 1945 bls. bagging.
National Bank of Commerce, Hellig Olav, Copenhagen, 113 bls. bagging.
National Bank of Commerce, Hellig Olav, Copenhagen, 337 bls. rags.
Brown Bros. & Co., Anna C., Naples, 117 bls. rags.
American Woolstock Corp., Anna C., Naples, 83 bls. rags.
Philadelphia National Bank, Anna C., Genoa, 88 bls. tares.
Brown Bros. & Co., Anna C., Genoa, 51 bls. rags.
National City Bank, Anna C., Genoa, 54 bls. rags.
Equitable Trust Co., Anna C., Trieste, 66 bls. rags

OLD ROPE

National City Bank, Pittsburgh, Antwerp, 18 bls.
W. Steck & Co., N. Amsterdam, Rotterdam, 115 bls.
J. Chafin, Indep. Hall, Bordeaux, 222 bls.
Brown Bros. & Co., City of Hankow, Hull, 266 coils.
W. Schall & Co., Bankdale, Barcelona, 50 coils.
Irving Bank Columbia Trust Co., Berlin, Bremen, 67 coils.
Brown Bros. & Co., Chicago City, Bristol, 133 coils.

SUNN ROPE

New York Cordage Co., Pittsburgh, Antwerp, 30 coils.

MANILA ROPE

Ellerman's Wilson Line, Minnewaska, London, 48 coils.

CASEIN

Atterbury Bros., Inc., Indep. Hall, Bordeaux, 267 bags, 20,104 kilos.

WOOD PULP

Scandinavian Pulp Agency, Inc., Hjelmarea, Helsingfors, 3547 bls. wood pulp.
Pagel, Horton & Co., Inc., Hjelmarea, Helsingfors, 200 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Hjelmarea, Sundsvall, 1250 bls. sulphate pulp.
Scandinavian Pulp Agency, Inc., Hjelmarea, Sundsvall, 375 bls. sulphite pulp.
Tidewater Papermills Co., Bornholm, Murray Bay, 6267 bls. wood pulp.
E. M. Sergeant Co., Stockholm, Gothenburg, 744 bls. dry soda pulp.
E. M. Sergeant Co., Stockholm, Gothenburg, 508 bls. sulphite pulp.
Price & Pierce, Ltd., Stockholm, Gothenburg, 1200 bls. wet pulp.
Ira L. Beebe Co., Inc., Berlin, Bremen, 870 bls. wood pulp.
Castle & Overton, Inc., Berlin, Bremen, 280 bls. wood pulp.
Pagel, Horton & Co., Inc., Sangstad, Gefle, 2500 bls. sulphate, 508 tons.
Bulkley, Dunton & Co., Sangstad, Gefle, 2750 bls. sulphate, 558 tons.
M. Gottesman & Co., Inc., Sangstad, Sundsvall, 2500 bls. sulphate, 507 tons.

WOOD PULP BOARDS

Wilkinson Bros. & Co., Inc., Stockholm, Gothenburg, 82 bls.
M. Meyerson, Stockholm, Gothenburg, 59 bls.

WOOD FLOUR

The Burnet Co., Stockholm, Gothenburg, 235 bags.
B. L. Soberski, Hellig Olav, Oslo, 600 bags.

BOSTON IMPORTS

WEEK ENDING OCTOBER 10, 1925

Masuret Worsted Mills, Barbadian, Antwerp, 1 cs. paper.
Stauntons, Ltd., Barbadian, Antwerp, 120 bls. paper hangings.
French Worsted Co., Barbadian, Antwerp, 30 cs. parchment paper.
E. Butterworth Co., Inc., Barbadian, Antwerp, 63 bls. flax waste.
American Exchange National Bank, Barbadian, Antwerp, 23 bls. flax waste.
J. Spaulding Sons Co., Barbadian, Antwerp, 265 bls. flax waste.
Brown Bros. & Co., Barbadian, Antwerp, 90 coils old rope.
Baring Bros. & Co., Ltd., Barbadian, Antwerp, 238 bls. rags.
Anglo-South American Trust Co., Barbadian, Antwerp, 256 bls. rags.
T. D. Downing & Co., Barbadian, Antwerp, 28 bls. paper stock.
True & McClelland, Barbadian, Antwerp, 47 bls. paper stock.
G. M. Graves & Co., Barbadian, Antwerp, 25 bls. old canvas.
G. M. Graves & Co., Barbadian, Antwerp, 66 bls. old rope.
Crocker, Burbank Co., Barbadian, Antwerp, 628 bls. waste paper.
Anglo-South American Trust Co., Capulin, London, 370 bls. rags.
C. H. Dexter & Son, Capulin, Dundee, 53 bls. rags.
Atlantic National Bank, Chicago, Bordeaux, 268 bags casein.
Lagerloef Trading Co., Hjelmaren, Helsingfors, 92 bls. wood pulp boards.
Pagel, Horton & Co., Inc., Hjelmaren, Skutskar, 4000 bls. wood pulp.
Bulkley, Dunton & Co., Segundo, 2350 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 10, 1925

Weil & Co., Bankdale, Marseilles, 44 cs. writing paper.
Brown Bros. & Co., Bankdale, Marseilles, 108 bls. rags.
National Bank of Commerce, Bankdale, Marseilles, 252 bls. rags.
The Stone Bros. Co., Inc., Bankdale, Marseilles, 83 bls. rags.
Baltimore Trust Co., Bankdale, Barcelona, 75 bls. rags.
A. W. Fenton, Inc., Cornish Point, Leith, 51 bls. rags.
A. W. Fenton, Inc., Cornish Point, Leith, 72 bls. bagging.
Old Colony Trust Co., Cornish Point, Leith, 121 bls. old rope.
Equitable Trust Co., Capulin, London, 256 bls. paper stock.
Castle & Overton, Inc., Indep. Hall, Bordeaux, 175 bls. rags.
Baltimore Trust Co., Indep. Hall, Bordeaux, 844 bls. rags.
E. J. Keller Co., Inc., Indep. Hall, Bordeaux, 212 bls. rags.
Union National Bank, Tagliamento, Naples, 256 bls. rags.
Baltimore Trust Co., Tagliamento, Naples, 402 bls. rags.
Philadelphia National Bank, Vardulia, London, 53 bls. rags.
A. H. Searle, Vardulia, London, 192 bls. old rope.

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 10, 1925

S. Kann & Son, Vincent, Havre, 1 cs. writing paper.
G. M. Graves & Co., Barbadian, London, 259 coils old rope.
Pagel, Horton & Co., Inc., Sangstad, Gefle, 1000 bls. sulphite pulp, 152 tons.
Pagel, Horton & Co., Inc., Sangstad, Gefle, 7000 bls. sulphate pulp, 1422 tons.
M. Gottesman & Co., Inc., Sangstad, Sundsvall, 5775 bls. sulphite pulp, 1173 tons.
Brown Bros. & Co., Sangstad, Norrsundet, 2000 bls. sulphite pulp, 406 tons.
S. Kaun & Son, Vincent, Havre, 1 cs. writing
Bulkley, Dunton & Co., Segundo, 3875 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING OCTOBER 10, 1925

M. Gottesman & Co., Inc., Sangstad, Sundsvall, 2625 bls. sulphite pulp, 533 tons.

NEWPORT NEWS IMPORTS

WEEK ENDING OCTOBER 10, 1925

M. Gottesman & Co., Inc., Sangstad, Sundsvall, 875 bls. sulphite pulp, 177 tons.
Johanson, Wales & Sparre, Inc., Sangstad, Sundsvall, 3500 bls. sulphite pulp, 710 tons.

New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, October 14, 1925.

The condition of the paper market is very sound at present. Practically all the various grades of paper are in strong demand and a gratifying volume of inquiries are also being received for future business. The prices of all commodities are being well maintained and only minor changes, if any, are expected to be made in the near future. The sales organizations of the leading paper houses are enjoying an active and profitable season and the outlook for the future is brighter than for some considerable period of time.

News print continues to be in great demand and a strong contract movement is anticipated in some quarters. The tone of the market is slightly weaker, however, due to the announcement of a reduction in news print prices for the forthcoming year, which will be the outcome of greatly increased production and cheaper operating costs. The leading newspapers of the country will absorb an immense quantity of news print until after the Christmas holidays, thanks to growing circulations and increased advertising patronage.

Orders for box board are steadily growing and inquiries for future business are more frequent. Further gains are expected before the end of the year. Fine papers are also in greater demand and innumerable orders of fair volume are coming in from the printers. Coarse papers are well to the front and the volume of sales being transacted is quite satisfactory.

Mechanical Pulp

Trading in the ground wood market continues to expand. The demand for spot supplies, in particular, is broadening. During the past week a good volume of contract buying has also developed. Prices remain firm at the recently quoted basis and there are predictions of slight advances before long. Mechanical pulp continues to move very freely into the consuming channels and the general outlook is excellent.

Chemical Pulp

The consuming demand for chemical wood pulp shows no signs of slackening and many buyers are said to be purchasing at a considerable period ahead in anticipation of higher prices. Kraft and sulphate continue to be in unusually strong demand. Advances have been reported in the prices of domestic sulphite and No. 2 strong unbleached imported sulphite. The stocks of both domestic and foreign pulp producers are below normal and the tendency of the market is to advance still further.

Old Rope and Bagging

The mill demand for old rope is fairly satisfactory and is quite sufficient to take care of the supplies now in the market. Prices for the better grades are holding firm. The domestic and foreign supply of bagging is also quite sufficient to absorb available supplies. The prices of bagging are inclined to advance and the market is steadily expanding.

Rags

Domestic rags continue to be in moderate demand and prices remain nominally unchanged. The amount of stock offered, however, seems rather restricted. There has been some little increase in the buying of foreign rags, but the higher grades are very scarce on account of the heavy home consumption of the European mills. Higher selling levels for foreign rags are anticipated by many observers of the market.

Waste Paper

Although the prevailing mill demand is rather quiet, the waste paper market is in a stronger position today, thanks to the strength being evidenced in the chemical and mechanical pulp markets. The demand for old kraft paper is excellent and, as the output has been limited, prices for this commodity are increasing steadily. White news is also in good demand and prices are generally firm. The demand for board grades has been moderate. Increased consumption of waste paper in the near future is confidently anticipated in many quarters.

Twine

With the autumn season well under way the demand for twine is becoming more urgent. Prices are generally higher in all grades than recently quoted. Most dealers express the utmost confidence of the continued expansion of the twine market until, at least, the end of the approaching holiday season.

Wood Consumption by Japanese Paper Mills

WASHINGTON, D. C., October 14, 1925.—The mills of the Japanese Paper Association during the month of July report a consumption of 2,823,613 cubic feet of wood, 1,347 short tons of rags, 293 tons of straw, and 1,206 tons of waste paper in addition to 18,552 tons of chemical pulp and 19,517 tons of mechanical pulp, according to a report received by the Paper Division of the Department of Commerce. Of the wood pulp consumed, 13,180 tons of chemical pulp and 18,245 tons of mechanical groundwood were produced in the association mills.

Russia Buys Norwegian Paper

WASHINGTON, D. C., October 7, 1925.—A contract for the sale of 20,000 metric tons of news print and other paper, at a cost of between $1,120,000 and 1,400,000 was closed recently between Soviet Russia and Norwegian paper mills, according to a statement recently issued by the Commercial Attache of the Russian diplomatic mission at Calo. The news print is sold in terms of Norwegian crowns, while the bulk of the other paper is payable in pounds Sterling. Delivery is to begin October 1, 1925, and must be completed before July 1, 1926.

New Officers of Paper Safety Section

The following officers of the paper and pulp section of the National Safety Council were elected at the Safety Congress recently held in Cleveland, Ohio:

W. J. Peacock, Northern Paper Mills, Green Bay, Wis., chairman; F. H. Rosebush, Wekoosa-Edwards Paper Company, Port Edwards, Wis., vice-president; Amiel Umberham, Fort Howard Paper Company, Green Bay, Wis., secretary.

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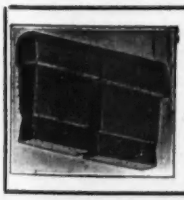

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Paper and Woolen Mfrs.' Supplies
COTTON AND WOOLEN WASTE
Warehouse—Hoboken, N. J. Branch Office—Holyoke, Mass.

COMBUSTION ENGINEERING CORPORATION
PULVERIZED FUEL
45 BROAD STREET, NEW YORK

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, October 14, 1925.

Trading in the chemical market during the past week has continued active. Since the beginning of October, a heavy spot demand has developed and prices have generally been well maintained. Some new contract business has been transacted but most of the purchasers are apparently awaiting the announcement by the manufacturers of the contract prices for the forthcoming year. Very little revisions, however, are expected to be made in the selling levels, as compared with the basis now in existence. Stocks are moving freely and despite increased output, are reported to be down. The slight surplus production which arose out of the lack of demand during the summer months has been practically absorbed by deliveries against standing contracts. The strong position of the chemical market at the present moment leads many observers to express the opinion that the improvement will continue until the approach of next spring.

BLANC FIXE—The demand for blanc fixe continues to expand and the general tone of the market is sound. Inquiries for future business are being received in good volume and the future outlook is very promising. Blanc fixe is still quoted at from $60 to $70 a ton for the pulp, and from $80 to $100 a ton for the powder.

BLEACHING POWDER—Bleaching Powder has been in good demand since the autumn season opened and many consumers are inquiring for contracts for the coming season. Some business is reported to have been transacted at the current levels, which are expected to be maintained, as only moderate stocks are available. The bleaching powder market is still quoting from $1.90 to $2.30 per 100 pounds, in large drums, at works.

CAUSTIC SODA—The caustic soda market is very active and production has recently been on a large scale. No supplies have accumulated, as the steady demand has utilized stocks almost at once. Contract withdrawals have been very heavy of late. It is thought that the contract prices for the forthcoming year will be unchanged. Caustic soda continues to be quoted at from $3.10 to $3.15 per 100 pounds, at works.

CASEIN—A fairly good demand has been experienced for casein during the past week. The spot movement is rather slow and little contract business has developed. The prevailing quotations rule from 13 to 14 cents a pound, in bags and practically no price changes are expected for some time.

CHINA CLAY—The china clay market remains unchanged. Shipments of clay against standing contracts are moving in a satisfactory manner. A fair number of inquiries are being received for future business. Imported grades are quoted at from $14.50 to $22.50 a ton and the domestic grades at from $12 to $15 a ton.

CHLORINE—The demand for chlorine has increased considerably during the last few weeks and shipments have been very frequent. The sales forces of the leading manufacturers have been pushing chlorine extensively with excellent results and much optimism is being expressed regarding the future of this commodity. Quotations are well maintained at from 4 to 4½ cents per pound, in tanks, at works, and from 5½ to 8 cents a pound, in drums.

ROSIN—The consumption of rosin has fallen off slightly and there have been more fluctuations in prices during the past week. A sharp decline in prices has taken place but a reaction in the market is anticipated by many observers. At the naval stores rosin is at present quoted at from $15.25 to $15.50, ship side, in barrels of 280 pounds.

SALT CAKE—The salt cake market is fairly active and a good volume of inquiries are being received. Supplies available at the prevailing prices are diminishing and an advance is expected in some quarters. A great expansion of business is expected when the new contract season gets well under way. The price for salt cake continues firm at from $20 to $22 a ton, in bulk, at works.

SODA ASH—A great improvement has been experienced in the soda ash market and production has been on a large scale in order to cope with the improved demand. Despite rumors, however, no big contract business has been transacted. Spot business has been very heavy and has generally been accepted at present levels. Quoted prices remain firm at from 1.38 to 1.63 cents a pound, in bulk, at works.

STARCH—Starch prices have been affected by the recent reactions in the grain market and the leading refiners have been able to make substantial concessions to their customers, due to the lower quotations prevailing for corn. The rate for paper makers starch is now quoted at $3.67 per 100 pounds, in bags, and $3.84 in barrels.

SULPHATE OF ALUMINA—The sulphate of alumina market has been stimulated by a broader demand from the paper industry Spot trading has improved and some contract business is also reported to have been done. The quoted price ranges from $1.40 to $1.50 cents a pound, for commercial grades, and from $2.00 to $2.35, for the iron free.

SULPHUR—Business in the sulphur market is normal for this season and the tone of the market is steady. Contract withdrawals have been satisfactory and the demand for supplies has been fairly active. The price continues to be quoted at from $19 to $20 a ton, in bulk, ship side, and from $15 to $16 a ton, at mine.

TALC—There has been little change in the talc market. Stocks are in fair volume and are quite sufficient to take care of the prevailing demand. The price of talc continues to be quoted at from $17 to $18 a ton, according to grade.

The New Austin Book of Buildings

The Austin Company, of Cleveland, Ohio, is sending out the new Austin Book of Buildings. This is the Eighth Edition of the company's general catalogue and by far the largest and most helpful to industrial executives. Some of the unusual features in the new Austin Book of Buildings are: Cost of building trend with a chart showing seven-year period. Multistory—single Story building trend chart. Chart showing decentralization in manufacturing and distribution. Table of Comparative Insurance Rates. Chart showing how soil bearing pressure affects building costs. A ten-page technical section covering descriptions, advantages, relative costs of various types of doors, walls, roof, structures, wall facings and roof waterproofings.

All of this special data is included in the new Austin Book in addition to a large number of illustrations and descriptions of modern industrial and commercial buildings. Multistory reinforced concrete and mill type buildings, as well as single story steel frame structures, are included—with examples selected from Austin operations extending from coast to coast.

Austin Standard Buildings, Multistory and Single Story, are illustrated and described in the new book—an entire section being devoted to these well known structures of the permanent type.

Personal copies of the new 100-page Austin Book of Buildings will be mailed to executives upon request.

Rise in Crown Influences Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 14, 1925.—The recent rise in the value of the Norwegian crown is greatly influencing the pulp and paper industry in that country, according to a report from Consular Clerk at Oslo. Sales are effected with difficulty and exporters have assumed a waiting attitude. The mechanical pulp market is dominated entirely by the Swedish, Finnish, and Canadian exporters and business is done at prices prevailing during the summer. Better prices or a reaction in exchanges are the only remedies for the present situation. Chemical pulp mills are also feeling the effects of the present exchange rates and one mill has already stopped work.

F. L. SMITHE MACHINE CO., INC.

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Designers and Manufacturers of Automatic Machinery
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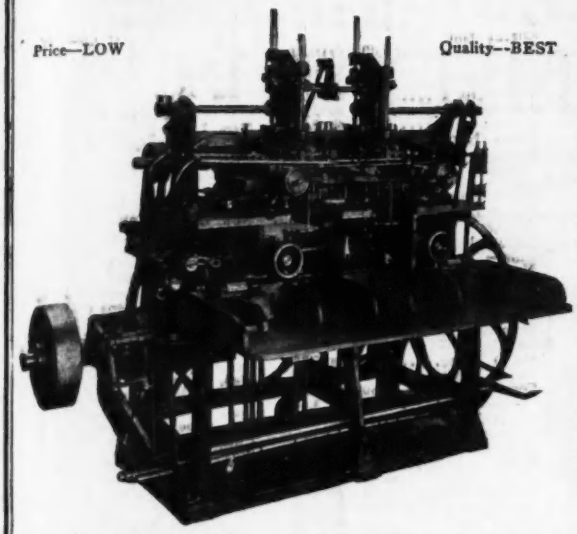
Estimates on Large or Small Jobs.

Price—LOW Quality—BEST



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Some portion of our clay production is *pulverized*. That part of it which is *pulverized* is, as far as we know, the only *pulverized clay* which is washed and refined before being pulverized.

This insures greater freedom from impurities and an exceedingly uniform product.

Prices on M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit samples and quote you

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110 William St.,
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DRYER FELTS

STANDARD and MULTIPLE PLY

ENGLISH WEAVE

In Two, Three, Four, Five and Six Ply, 60 inches to 176 inches in width.

BY ACTUAL TEST this felt will dry 33 per cent more paper, with ABSOLUTELY NO FELT MARKS IN THE PAPER.

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THREE PLY FELT for other paper

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BARNES MINERAL TANNED LEATHER BELTS

For Paper Mills—Special Features

BARNES Mineral Tanned Belt is impervious to heat, cold, steam, gas and oils, and can be used where Rubber and Oak Tanned belts are impracticable.

ALL our belts that have been used have stood the test in every way, and every belt we put out we guarantee to do the same. Some have been in operation more than fifteen years.

RIGID tests have proven that Barnes Mineral Tanned Belts have a big advantage over all other belts, as there is practically no stretch whatever.

NO need of using any belt dressing to stop the belts from slipping, such as has to be used on most all other kinds of belting, as the belt will cling to the pulley on all kinds of work on account of the friction of the belt.

ESPECIALLY adapted for hard work in Saw Mills, Paper Mills, Dye Mills, and all places where the belt is apt to come in contact with acids, oils, steam, etc.

SAMPLES of our Barnes Mineral Tanned Belt will be sent upon application, by ordering through our agents or direct.

The Best Belt

Manufactured for Lenox Drives and Quarter Turn

Tanners and Manufacturers

HENRY K. BARNES COMPANY

234 Devonshire St., Boston, Mass.

Market Quotations

Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Abitibi Power and Paper, Gen. 6s 1940	101	103*
Advance Bag and Paper, 7s 1943	98	100*
Bastrop Pulp and Paper, 7½s 1932	104	108*
Brompton Pulp and Paper, 6s 1927	94	96
Beaver Board, 8s 1933	92	94
Bedford Pulp and Paper, 6½s 1942	98	...
Berkshire Hills Paper Co., 8s 1941	...	80
Beaver Board, N. Y. Curb, 8s 1933	93	95
Beaver Products Corp., 7½s 1942	104	106
Belgo Canadian Paper, 6s 1943	101	103
Brown Paper Co., 8s 1931	102	...
Berlin Mills, 5s 1931	98	...
Bryant Paper Co., 6s 1942	99	102*
Brown Company, Serial, 6s 1925-43	97	100
Central Paper 6½s 1925-42	91	94
Cape Breton Pulp and Paper, 6s 1932	100	...
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	101	...
Cherry River Paper, 5s 1929	98	100*
Donnaconna Paper Co., Ltd., 6s 1940	99	101
Eddy Paper, 7½s 1931	97	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	87	95*
Fox River Paper, 7s 1931	100	...
Fort Orange Paper Co., 7s 1942	95	99
Eddy Paper Co., 7½s 1931	95	...
Gilbert Paper Co., 7s 1927	96	...
Gilbert Paper Co., 6½s 1923-29	101	102*
Hammermill Paper Co., 6s 1930-39	99	...
Hercules Corp'n, 8s 1936	100	...
Hummell, Ross Fibre Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	97	...
Kenmore Pulp and Paper Co., 6s 1937	90	...
Lake Superior Pulp and Paper, 6s 1941	105	...
Mattagami Pulp and Paper, 6s 1937	90	...
Marinette & Menominee, 7½s 1936	104	...
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	102	105
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	101	...
Paterson Parchment Paper, 5½s 1927-28	98	100
Paterson Parchment, 6s 1938	98	100*
Parker Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., 6s 1943	98	101
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordon Co., Series A, 8s 1940	115	118
Riordan Paper, 6s 1924	99	101
Riordan Pulp and Paper, Ltd., 6s, 1929	33	35
River Raisin Paper, 8s 1936	104	106
St. Maurice Paper Co., Ltd., 5½s, 1929	98½	99¾
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	96	99
Smith (Howard) Paper Mills, 6s 1934	98	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	86	90
Spanish River Pulp and Paper, 6s 1931	105	108
Spanish River Pulp and Paper, Gen 8s 1941	106	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Ticonderoga Pulp & Paper 1-5, 1930	88	93
S. D. Warren Company, 6s, 1945	97	100
Whittaker Paper, 1st 7s 1942	98	...
Watab Paper Co., 6½s 1942	100	104
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	88	90

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	65	68
Abitibi Power and Paper, Pfd	103	...
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	77	...
Beaver Board, Com	4	6
Beaver Board, Pfd	32	35
Bryant Paper, Cap	12	...
Bryant Paper, Pfd	9	...
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd	98	104
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd	98	SW
Donnaconna Paper, Com	49	54
Donnaconna Paper, Pfd	95	100
Great Northern Paper, Cap	260	270
Jessup & Moore Paper, Pfd	80	85
International Paper Co., Com	71	73
International Paper Co., Pfd. 6%	75	80
Mengel Company, Com	60	65
Mengel Company, Pfd	83	93
Oxford Papers, Com	93	97
Oxford Paper Co., Pfd	98	...
Provincial Paper Co., Com	94	98
Provincial Paper Co., Pfd	99	...
Price Brothers, Cap	47	50
St. Croix Paper	185	215
St. Maurice Paper Co., Cap	83	85
St. Regis Paper Co., Cap	54	56
Spanish River Pulp and Paper, Com	99	101
Spanish River Pulp and Paper, Pfd	107	...
Ticonderoga Pulp and Paper, Cap	145	...
West Virginia Pulp and Paper, Cap	...	47
West Virginia Pulp and Paper, Pfd	95	105
Whittaker Paper, Com	45	...
Whittaker Paper, Pfd	60	70

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.25	@ 8.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream		
White No. 1	.70	@ .90
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.65	@ .75
Kraft	.85	@ .95
Manila	.70	@ .80
Kraft—		
No. 1 Domestic	5.75	@ 6.25
No. 2 Domestic	5.10	@ 5.50
Southern	4.75	@ 5.00
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	4.50	@ 5.00
No. 2 Fibre	4.25	@ 4.75
Common Bogus	2.50	@ 2.75
S. Screening	3.00	@ 3.50
Card Middles	4.00	@ 5.00
Boards—per ton—		
News	45.00	@47.50
Straw	57.00	@60.00
Chip	42.00	@45.00
Binders' Boards	72.50	@77.50
Sgl. Mla. Ll. Chip.	58.00	@60.00
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	33.00	@37.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@32.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	4.00	@ 4.50
Easy Bleaching	3.25	@ 3.45
No. 1 strong unbleached	2.90	@ 3.25
No. 2 strong unbleached	2.75	@ 2.85
No. 1 Kraft	2.95	@ 3.20
Sulphate—		
Bleached	3.75	@ 4.00

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	4.00	@ 4.50
Easy Bleaching Sulphite	3.00	@ 3.25
News Sulphite	2.65	@ 2.80
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	3.00	@ 3.50
Soda Bleached	4.00	@ 4.25

Domestic Rags

New Rags

Prices to Mill f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	14.25	@15.00
New White, No. 2	8.00	@10.00
Silesias No. 1	10.50	@11.50
New Unbleached	14.00	@15.00
Washables	6.50	@ 9.25
Fancy	9.75	@10.25
Blue Overall	11.50	@11.75
New Blue Prints	7.50	@ 8.50
New Soft Blacks	5.75	@ 6.20
Mixed Khaki Cuttings	7.00	@ 8.00
Pink Corset Cuttings	10.25	@10.75
Pink Muslin	10.00	@10.50
New Light Seconds	3.25	@ 3.50
O. D. Khaki Cuttings	7.00	@ 8.00
Men's Corduroy	6.25	@ 6.75
New Mixed Blacks	4.00	@ 4.50

Old Rags

White, No. 1—		
Repacked	6.50	@ 7.50
Miscellaneous	6.50	@ 7.00
White, No. 2—		
Repacked	4.00	@ 4.25
Miscellaneous	3.50	@ 3.75
St. Soiled, White	2.90	@ 3.00
Thirds and Blues—		
Repacked	3.75	@ 4.00
Miscellaneous	3.00	@ 3.25
Black Stockings	3.75	@ 4.25
Roofing Rags—		
Cloth Strippings	2.35	@ 2.45
No. 1	2.35	@ 2.45
No. 2	2.40	@ 2.50
No. 3	2.10	@ 2.20
No. 4	2.00	@ 2.10
No. 5A	1.50	@ 1.75

Foreign Rags

New Light Silesias	10.50	@11.25
Light Flannelettes	10.50	@12.00
Unbleached Cottons	13.50	@15.00
New White Cuttings	13.50	@15.00
New Light Oxfords	10.50	@11.50
New Light Prints	9.00	@10.00
New Mixed Cuttings	4.25	@ 4.50
New Dark Cuttings	4.00	@ 4.50
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.25	@ 8.25
No. 3 White Linens	6.25	@ 6.75
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.25	@ 4.50
Ord. Light Prints	3.25	@ 3.75
Med. Light Prints	2.50	@ 3.00
Dutch Blue Cottons	3.50	@ 4.00
Ger. Blue Cottons	3.00	@ 3.25
Ger. Blue Linens	4.25	@ 4.75
Checks and Blues	3.25	@ 3.50
Linsay Garments	2.40	@ 2.50
Dark Cottons	2.25	@ 2.35
Shoppery	2.20	@ 2.30
French Blues	3.75	@ 4.25

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.15	@ 3.25
Domestic	3.15	@ 3.25
Wool Tares, light	2.65	@ 2.75
Wool, Tares, heavy	2.70	@ 2.80
Bright, Bagging	2.55	@ 2.65
Mixed Bagging	2.30	@ 2.40
Sound Bagging	2.10	@ 2.20
Roofing Bagging	1.90	@ 2.00
Small Mixed Rope	2.00	@ 2.25
Manila Rope—		
Foreign	5.50	@ 6.00
Domestic	6.50	@ 7.00
New Bu. Cut	3.60	@ 3.85
Hessian Jute Threads—		
Foreign	4.00	@ 4.25
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.60	@ 3.80
Hard, White, No. 2	3.25	@ 3.50
Soft, White, No. 1	2.85	@ 2.95
Flat Stock—		
Stitchless	1.30	@ 1.40
Overissue Mag	1.30	@ 1.40
Solid Flat Book	1.20	@ 1.30
Crumpled No. 1	.85	@ .95
Solid Book Ledger	1.90	@ 2.00
Ledger Stock	1.50	@ 1.60
New B. B. Chips	.85	@ .95
Manilas—		
New Env. Cut	2.25	@ 2.40
New Cut No. 1	1.75	@ 2.00
Extra No. 1 old	1.20	@ 1.30
Print	.80	@ .90
Container Board	.70	@ .80
Bogus Wrapper	.80	@ .90
Old Krafts Machine compressed bales	2.25	@ 2.35
News—		
No. 1 White News	1.95	@ 2.05
Strictly Overissue	.80	@ .90
Strictly Folded	.70	@ .80
No. 1 Mixed Paper	.55	@ .60
Common Paper	.35	@ .45

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.42	@ .45
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.56	@ .61

"EASTCO"
BLEACHED SULPHITE

Using "Eastco" Bleached Sulphite ourselves, testing it day by day, in producing our line of "Eastco" Fine Writing Papers, we have complete control—because we have complete knowledge—of its quality, uniformity and adaptability to the requirements of the paper maker.

"Eastco" Bleached Sulphite is good pulp; it makes good paper. Furnished in Bales, Rolls or Laps as required. Write for Samples and Prices.

EASTERN MANUFACTURING COMPANY
292 MADISON AVENUE, NEW YORK CITY

TABER PUMPS

Fig. 510 illustrates Taber SL Double Suction Centrifugal Pump.
TABER PUMP COMPANY
BUFFALO, N. Y.

A. J. BRADLEY MFG. COMPANY
Oiled Stencil Board
Lamp Shade Parchment
IN A VARIETY OF GRADES AND COLORS
101 BEEKMAN STREET NEW YORK

EMPIRE ROSIN

QUALITY SIZE

EMPIRE SIZE & CHEMICAL CORP.
ALBANY, NEW YORK

WALDRON MACHINES
FOR
EMBOSSING, COATING, PRINTING,
Machines for Processing Paper
Calenders, Winders & Slitters
Francke Flexible Couplings
JOHN WALDRON CORPORATION
NEW BRUNSWICK, N. J.
CHICAGO NEW YORK BOSTON

THE PAPER TRADE JOURNAL
Covers the Paper and Pulp Industry in All Its Branches

Finished Jute—			
Dark, 18 basis	.30	@	.31
Light, 18 basis	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.21	@	.23
Tube Rope—			
4-ply and larger	.15½	@	.17½
Fine Tube Yarn—			
4-ply and larger	.20	@	.28
4-ply	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14½	@	.15½
Paper Makers' Twine			
Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Ameri. Hemp, 6	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill			
All Rag Bond	35	@	40
No. 1 Rag Bond	25	@	35
No. 2 Rag Bond	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond	7	@	10¾
Sulphite Ledger	9	@	12
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	5½	@	7½
No. 1 S. & S. C. Book	6	@	7¾
Coated Book	7½	@	10
Coated Label	7½	@	10
News—Roll, mill	3½	@	4¼
News—Sheets, mill	3¾	@	4¾
No. 1 Manila	4½	@	5½
No. 1 Fibre	4½	@	5
No. 2 Manila	4	@	4½
Butchers' Manila	3¾	@	4¼
No. 1 Kraft	6	@	6½
No. 2 Kraft (Southern Grade)	4½	@	4¾
No. 2 Kraft (Northern Grade)	5	@	5¼
Wood Tag Boards	4¼	@	6¼
Sulphite Screenings	3	@	3¼
Manila Tissue, 24x36 sheet	7¼	@	7¾
White Tissue, 20x30 sheet	7¼	@	7½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	47.50
Solid News	47.50	@	50.00
Manila Line Chip	57.50	@	60.00
Container Lined—			
(Delivered Central Territory)			
85 Test	—	@	75.00
100 Test	—	@	80.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.25	@	3.50
White Envel. Cuttings	3.15	@	3.25
No. 1 Soft Shav.	2.90	@	3.10
No. 1 Mixed	1.45	@	1.50
No. 2 Mixed	1.15	@	1.20
Ledger and Writings	1.55	@	1.60
Solid Books	1.45	@	1.50
No. 1 Light Books	1.00	@	1.05
Blanks	2.00	@	2.10
Kraft	2.45	@	2.50
New Kraft Cuts	2.70	@	2.80
Manila Envelope Cuttings	2.50	@	2.60
Ex. No. 1 Manila	2.25	@	2.35
Print Manila	1.05	@	1.10
Folded News (oversize)	.90	@	.95
Old Newspapers—			
No. 1	.80	@	.85
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.75	@	.80
No. 2	.55	@	.60
Straw Clippings	.75	@	.80
Binders Clippings	.75	@	.80
Roofing Stocks, f. o. b. Chicago, Net Cash—			
No. 1	47.00	@	52.00
No. 2	45.00	@	50.00
No. 3	43.00	@	48.00
No. 4	41.00	@	46.00

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.10½
Rag Content	.17	@	.45
All Rag	.36½	@	.51
Writings	.08	@	.20
Superfines	.22	@	.50
News	.04	@	.04½
Book, Super	.08	@	.10
Book, Coated	.09	@	.14
Coated Litho	.09½	@	.15
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.12
Manila, Sul. No. 1	.05	@	.05
Manila, Sul. No. 2	.03¾	@	.04¼
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.05¼	@	.05½
Common Bogus	.02½	@	.02¾
Straw Board	—	@	50.00
News Board	—	@	50.00
Chip Board	—	@	47.50
Single Manila Pulp lined board	57.50	@	60.00
Single White, patent coated board	75.00	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	3.75	@	4.00
White Blank News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White	.02¼	@	.03
No. 2 Soft White	.02½	@	.03
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.00	@	1.75
No. 1 Books, Heavy	1.25	@	—
No. 1 Books, Light	—	@	1.25
No. 1 New Manila	2.50	@	2.60
No. 1 Old Manila	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.25	@	—
Overissue News	1.00	@	—
Old Newspapers	.70	@	—
No. 1 Mixed Paper	.60	@	.47½
Box Board, Chip	.60	@	.50

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	—	@	3.00
Domestic	—	@	3.00
Manila Rope	6.00	@	6.50
Mixed Rope	2.00	@	—
Scrap burlaps	—	@	2.37½
Wool Tares, heavy	2.50	@	2.75
Mixed Strings	—	@	1.90
New Burlap Cutting	—	@	3.75

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.15½	@	.15
Silesias, No. 1	.11	@	—
New Unbleached	.14½	@	.15
Washable	.07¾	@	.08
Fancy	.10½	@	—
Cottons—According to Grades—Blue—			
Blue overalls	12½	@	—
New Black, soft	.07	@	—
Khaki Cuttings	.07	@	—
Corduroy	.04	@	.05
New Canvas	.12	@	.12½

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1	10.00	@	—
Repacked	9.50	@	—
Miscellaneous	8.50	@	—
White No. 2—			
Repacked	6.50	@	—
Miscellaneous	5.25	@	—
Thirds and Blues—			
Repacked	5.00	@	—
Miscellaneous	3.50	@	—
Roofing Stock—			
No. 1	2.75	@	—
No. 2	2.50	@	—
No. 3	1.90	@	—
No. 4	2.00	@	—

PHILADELPHIA

Paper

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph.	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila No. 2	.04	@	.04½
No. 2 Kraft	.05¼	@	.05¾
No. 1 Kraft	.06¼	@	.06½
Common Bogus	.02¾	@	—
Straw Board	56.00	@	55.00
News Board	47.50		
Chip Board	50.00		
Wood Pulp Board. (Carload Lots)	4.50	@	5.00
Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	66.00	@	68.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70
Common Paper	.50	@	.60
Straw Board, Chip	.60	@	.65
Binders Bd., Chip	.60	@	.65

Domestic Rags—New

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13½	@	.14
New White, No. 2	.06	@	.08
Silesias, No. 1	.10½	@	.11
New Unbleached	.14	@	.14½
Washable	.07¼	@	.07¾
Fancy	.09½	@	.10
Cottons—according to grades—			
Blue Overall	.11	@	.12
New Blue	.04	@	.04¼
New Black Soft	.06	@	.06½
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.06½	@	.07
Corduroy	.04	@	.04½

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Manila Rope	4.75	@	6.00
Sisal Rope	2.50	@	—
Mixed Rope	1.00	@	1.25
Scrap Burlaps	2.25	@	2.50
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.25	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.25	@	3.50

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.60	@	2.70
No. 2 Soft White	2.00	@	2.20
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	1.00	@	1.10
Solid Ledger Stock	1.75	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.30	@	1.40
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	1.80	@	2.00
No. 1 Old Manila	1.60	@	1.75
Print Manila	1.25	@	1.35
Container Manila	1.00	@	1.10
Old Kraft	2.00	@	2.10
Over issue News	.85	@	1.00
Old Newspaper	.70	@	.75
New Canvas	.08¾	@	.09
New Black Mixed	.05	@	.05½

Old

White, No. 1—			
Repacked	6.75	@	7.00
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05¼
Miscellaneous	.04¼	@	.05
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.15	@	3.25
Black Stockings	4.25	@	4.50
Roofing Stock—			
No. 1	2.00	@	2.15
No. 2	1.90	@	2.00
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	1.10	@	1.15
B	1.05	@	1.10
C	1.00	@	1.05

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.10½	@	.12½
Light tinted	.11	@	.13½
Dark tinted	.12½	@	.15
Ledgers (sulphite)	—	@	.13
Ledgers No. 1	.36	@	—
Ledgers No. 2	.27	@	—
Writing	.09½	@	
Writing S. C.	.10	@	
News f. o. b. Mills—			
Rolls (carloads)	3.50	@	—
Sheets (carloads)	—	@	4.25
Sheets (2 tons or over)	—	@	4.60
Book—			
No. 1 M. F. (carloads)	8.00	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.50	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rag	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	27.00	@	33.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	56.00	@	60.00
Sulphite, bleached	78.00	@	90.00
Sulphate	67.50	@	70.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. cut	3.65	@	—
Soft White Book shavings	—	@	3.15
White Blk. News	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas	1.10	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News	.90	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto	Per lb.		
No. 1 White shirt cuttings	.14½	@	.14¾
No. 2 White shirt cuttings	.08	@	.08½
Fancy shirt cuttings	.09¾	@	.10
No. 1 Old Whites	—	@	—
Third and blues	—		—